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STORIES



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By John Boston

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Scott Arthur Masear (page 93)



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Publisher

Lorraine D. Williams

Editor

Kim Mohr

Assistant Editor

James Webb

Editorial Assistant

Lisa Neuberger

Design and Production

Sarah Eggstad

Paul Hanchette

Dawn Munn

Marketing Manager

Jim Fallone

Advertising Manager

Cindy Rick

Circulation Manager

Janet Winters

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Amazingly Yours

Kim Mohan

I get a lot of letters, and I have a lot of fun paying attention to the different closings that people use—you know, the line right above the signature that usually includes some “-ly” word, alone or in combination with other words. The line where you slide out of your letter gracefully, the last chance to express some nice (or not so nice) sentiment.

Where *did* all these different expressions come from, anyway? Why do people choose one over another? Is someone's closing “style” a thoroughly considered decision, an off-the-cuff random choice, or simply a phrase that has become a habit and is tossed out automatically? Should I be careful about the way I close my letters, just in case the person I'm writing to is also one of those who pays attention to such things?

Well, I am careful, at least to the extent that I think about how to slide out of each letter I write. For me it usually boils down to a choice between “Sincerely,” which I use if I'm writing to someone for the first time, or “Best regards,” which I generally reserve for people with whom I've developed a correspondence relationship. One of the two seems to work for me in practically every case.

Once in a while I go for “Best,” which I've never quite understood (Best what?) but still seems correct for some occasions, usually when the person I'm writing to has “Bested” me at the end of a previous letter. I figure maybe that person knows what it means, so there's no risk of

my spreading confusion by using it back.

There are a couple of more complex variations of “Best” that I can't imagine I'll ever use, though, because they're either terribly confusing or downright scary.

“All my best”: Again, the question arises—all your best *what*? Can you really give me *all* your best, or do you think you should save some for the next person you write to? What happens if you run out and you still need some?

“All the best”: No, please, not that! I don't want *everybody's* best all at once—that would be a terrible responsibility, and I don't know how I'd return it to all the right people.

Okay, I know these expressions aren't meant to be taken literally—but at the same time it seems to defeat the purpose of their existence if you can't at least take them seriously. People who close their letters with “All my best” aren't really giving me all their best; what they're doing is being friendly and warm, and inviting me to be friendly and warm back to them. Which I will do, but not by reciprocating with “All my best.” I'd rather go with something that's either a little more specific or a little more generic.

Someone told me a long time ago that there's one type of closing that's definitely not meant to be taken seriously—the innocent word “Cordially,” which according to my informant is the closing to use at the end of a letter that is *not* cordial. Has anyone

else ever heard of this strange convention? Can somebody explain the logic of this custom to me, or am I looking for logic where none exists?

It might be a slightly more interesting world if our letter-writing etiquette had evolved differently. What if closings were required to be accurate, to convey some fundamental truth about the letter or its writer? We might be choosing from phrases such as these: “Ostentatiously yours,” for a non-business letter that's printed on corporate or institutional stationery; “With sincere haughtiness,” for someone who thinks he's doing you a favor by writing to you; “All my disdain,” for the letter you write back to that person, or “Insincerely yours,” which would be appropriate for a fair percentage of the letters I've received (and—yes—a few of the ones I've sent).

Some of my correspondents have broken out of the pattern by creating their own unique (as far as I know) closings. One of those is “Ad astra,” which is Latin for someplace we'd all like to go. Another is “Without wax”; I used to know what that meant, but I've forgotten. And then there's “Your humble and obedient servant”; it's not unique but it hasn't been in vogue for a long time.

I've thought about coming up with my own distinctive closing line, but haven't settled on anything yet. I am sure, however, that I'll never end a letter with the words I've used to title this column. Some things are better left unsaid. ♦

Reflections

Robert Silverberg

There's good news and bad news on the cosmological disaster front.

Last time, you may recall, we warned you of the possible imminent destruction of the Earth through a collision with Comet Swift-Tuttle. (Imminent, that is, provided you take a cosmic view of things. The estimated date of impact of Swift-Tuttle has been calculated at August 14, 2126.)

I'm happy to report that those of you who are planning on living extremely long lives, or are extraordinarily concerned about the fates of your descendants, can relax. Dr. Brian Marsden of the Harvard-Smithsonian Center for Astrophysics in Cambridge, Massachusetts, who issued the original comet-crash warning a few months back, has now taken a second look at his figures. After studying newly discovered records of observations taken when Swift-Tuttle made its last visit to our corner of the universe, Dr. Marsden has recomputed the comet's orbit and tells us that it will miss us by a cheery 15 million miles in 2126. Instead of being part of one of the world's most impressive catastrophes, therefore, those of you who are still making the scene 133 years from now will be treated to a really splendid astronomical light-show. I envy you.

Of course, what can be calculated twice can be calculated three times. Dr. Marsden's next estimate of Swift-Tuttle's orbit may not be nearly as cheering. But I think that for the

time being we can stop worrying about this one.

Next on the worry list: the forthcoming ice age. Apparently it isn't going to come forth quite as soon as we thought.

What, you say? The problem of the moment is the greenhouse effect, isn't it? Hellacious hot temperatures everywhere, the polar ice packs melting, sea levels rising, climatic patterns changing all over the world as tropical rain forests spring up in South Carolina and pleasant temperate weather breaks out in Manitoba?

Well, yes, in the short run we still need to brood a little about the build-up of carbon dioxide, methane, and other so-called greenhouse gases in our atmosphere, and the worldwide rise in mean temperature that that is likely to produce. But we Cosmic Minds look beyond the short run, don't we? And in the somewhat longer run, the glaciers are due to make another trip across the Northern Hemisphere, with dire consequences for all those nice new greenhouse-effect wheat-farms up there in Canada.

Geological evidence tells us that glacial periods afflict the Earth with fairly predictable periodicity. On the large scale of geological time, they appear to come every 250 million years: the time of the earliest ones is still unclear, but there was one in the Cambrian period, about 500 million years ago, and another in the Permian, 240 million years back, and

then another, the most recent, that began during the Pleistocene, two million years ago.

But these great glaciations contain periods of fluctuation—the interglacial periods, when the ice retreats and the Earth reverts to something like its normal warmth. We are living in an interglacial period right now, one which began about 10,000 years ago. At that time, all of Canada lay under ice, and the United States was covered as far south as the valleys of the Ohio and Missouri rivers; in Europe, an ice sheet spread out of Scandinavia and reached as far as England in the west, Siberia in the east, and the latitude of Berlin in the south: a dazzling white blanket more than 10,000 feet thick, covering over two million square miles. Other European ice-fields radiated from the Alps, the Pyrenees, the Apennines, and the Carpathians, so that at the peak of the Pleistocene glaciation all of Europe north of the Mediterranean region was covered by ice.

Happily for us, most of that ice went away, making possible such things as the Neolithic agricultural revolution, the spread of civilization through the Fertile Crescent, the Roman Empire, and the development of the first primitive science-fiction magazines. But prevailing geophysical theory holds that such interglacial periods as the one we have enjoyed last only ten to twelve thousand years. Which is to say that the balmy interlude in the Pleistocene

glacial period that has contained the rise and development of human civilization is just about over, that the glaciers are due to come crashing down on us again almost immediately. (Which would be rather too effective a rescue from the torrid horrors of the greenhouse-effect world of the near future.)

Now come the first indications that that estimate may be overly pessimistic. A core drilled from mineral deposits along the walls of a 425-foot-deep crack in the Earth's surface known as Devils Hole, in Nevada, seems to support the conclusion that the periods between ice ages last for about 20,000 years, just about double the generally accepted figure. In that case, of course, we need not expect any worldwide climatic cooling for another seven to nine thousand years, which gives us a little more time to get ready for major changes in our lifestyles.

The Devils Hole findings, which were published in the autumn of 1992 in *Science*, have not been met with universal acceptance, since they seem at variance with the established belief that fluctuations in solar radiation are the primary cause of our planet's ice ages: the timetable for past solar cycles is well established, and the Devils Hole numbers don't match it. (They indicate, in fact, a previously unsuspected glacial period about 400,000 years ago, when the sun's output was believed to have been at normal levels.) Many geophysicists suggest that the data from Devils Hole represents some sort of local anomaly rather than a record of worldwide climatic conditions; some have questioned the validity of the oxygen-isotope dating system by which the figures were generated. "There is a genuine controversy here, and a jolly interesting one," says Dr. Nicholas Shackleton of Cambridge, one of the three scientists who in 1976 published a paper that seemingly clinched the argument for the solar-fluctuation theory.

We can leave the glaciologists to their jolly controversy, I suppose; but, in a world forever short of good news, let us clutch the Devils Hole report to our bosoms and hope that it will lead to a complete reevaluation of the glacial timetable. The return of the glaciers by, say, A.D. 2400 may make an interesting theme for a science-fiction novel—I wrote one myself, thirty-odd years ago, called *Time of the Great Freeze*—but it would be ever so much nicer for the human race to have a little more of an intermission between cold snaps.

Then, finally, there is the problem of the huge slab of the island of Hawaii that seems poised to fall into the sea.

This is the southeastern corner of the so-called Big Island, where the famous volcanoes (Mauna Loa, Mauna Kea, Kilauea) are located. A lot of people live there, too, including some friends of mine who have property not very far from Kilauea Crater. It may be that they have made an unwise real-estate investment, because recent satellite observations appear to show that a "break-away rift system" begins at the 4,000-foot-high summit of Kilauea and extends out to about 50 miles offshore, taking in the Puna Coast of the Big Island, where some 10,000 people currently live. This entire mass of terrain appears to be moving toward the sea at a rate of several inches a year.

When it finally falls in, unfortunately, it will land with an enormous splash—enough to set off tsunamis hundreds of feet high all around the Pacific Rim, with unhappy consequences for hundreds of millions of people. (My own house is on that rim, you understand—600 feet above sea level, which ought to be enough, but you never can tell. . . .)

Will it happen? Almost certainly, yes. In the past five years undersea exploration has turned up evidence that chunks of the various Hawaiian islands as big as 100 square miles in area have slid into the sea now and

then in the past, scattering debris outward for 100 miles or more. None of this has taken place during recorded history, but the process seems to be an ongoing one, and the next time it happens it will be a very historic event indeed.

At the moment, no reliable estimate of the date of the forthcoming landslide is being offered to us. It could occur tomorrow, though probably it won't. It might still be a hundred thousand years in the future: not my problem, then, or yours. But it seems to be inevitable. The land is moving, steadily and fast. "It is unstable, it is headed out . . . and you can't stop it," says Richard Fiske of the Smithsonian, who reported on the Hawaiian movements at a meeting of the American Geophysical Union in San Francisco last December.

So there you have it for now: the spring 1993 Earth report. We will be spared the comet crash and the early return of the ice age; but billions of tons of Hawaii may fall into the sea next week. This morning, at any rate, much of the planet seems fairly stable as I write this in Northern California. The sun is shining pleasantly around here, at least; local earthquake activity has been minimal lately; no volcanic eruptions were reported on the morning news; the tropical hurricane season is still some months away, down in the places where tropical hurricanes happen. (And did, last summer, with remarkable vehemence.) Let us be grateful for the blessings of the moment. For what we know, we inhabitants of Earth, is that we win a few and then we lose a few, and it's nice not to be on the losing side on any given morning, for who knows what the morrow will bring? I would not, at any rate, rush out there to buy a vacation home on Hawaii's Puna Coast, if I were you. ♦

FALCONER

Mark S. Geston



Illustration by
Lissanne Lake

Norce was given a model of the instrument he would inherit from his father, as tradition dictated. Although it was only a fraction of the real machine's size, the movements of its wings, claws and tail competently imitated the real thing. Mechanics, aeronautical responses, temporal as well as astral transmutation and blind-sight were convincingly simulated.

Its ocular globes were sheathed with malachite and lips and had mother-of-pearl lids over them cut thinly enough to be as pliable as flesh. Its wings flexed outward with miniaturized grace, then snapped abruptly for an imagined dive upon an enemy of the king. Its legs remained tucked against its belly until the wings extended again as air brakes; then they lowered and the claws sprang open to catch the imagined, hostile intelligence. But it was incapable of flight, and despite its verisimilitude, Norce knew that the true instrument's capabilities were only hinted at. The illusion was additionally flawed by the whir of polished clockworks and the need to wind them up each time he wished the model to resume its patrol from atop his outstretched hand.

It was nevertheless valuable for his education. By using it to illustrate their lectures, the king's scholars finally made Norce understand the tactics which must be used against the spirits of the air. They could also supervise his dissection of small birds and the integration of their brains, eyes and nervous systems into the model. Finches were usually chosen for such exercises because of their neural simplicity, and Norce was stunned each time their consciousnesses awakened inside his model and the light of their bright, primitive eyes shone through the antique lenses.

He was then able to understand how, for all their power, the marvelous instruments which guarded the king lacked the will and instinct required to hunt the sky's ethereal predators. It was for this reason that only the purest natural hunters were implanted in them. And even then, he realized as he watched his model's eyes move with the intelligence of an engrafted butcher, they owed nothing to mankind, neither loyalty nor affection. But they were aware of their new dress and the power and perception they attained once being rid of their mortal bodies. Atomic decomposition and solar radiation animated them. Ancient circuits extended their sight two hundred angstroms into the infrared at one extreme of the spectrum and an equal distance into the ultraviolet at the other. Their visual discrimination was refined by a factor of ten in the model and would be by a hundred in a true instrument. They felt no hunger, Norce was assured, but retained the hunt's obsession, and this drove them to a simple joy that overpaid them for their suffering.

He surpassed the sons of all the other falconers after he was given the model. His talents at empathetic bonding, mechanical and thaumaturgical preparation and dissection became great enough after a year to excuse a secret attempt to engraft the higher intelligence of a magpie into the model. Its brain capsule and neural harness had been designed to make such a thing impossible, for the dangers of such youthful intemperance were foreseen when it was built. But Norce almost managed to pare

away enough of the cortex to make the brain fit and still leave a coherent intelligence.

The king's scholars intervened when the creature revealed itself in the careful way it tested the model's powered limbs. Norce was reprimanded, but the scholars discreetly reported his progress to the king. At the end of his penance, Norce was allowed to join his father in the field. The model was retired to the Treasury.

On this occasion, the king was returning from a foreign embassy and was encamped in arid canyon lands on the southern frontier. Norce arrived with a supply train, and his father greeted him in the formal way prescribed for falconers. Although the boy had not seen him for months, he affected the same arctic manner.

His father's instrument was inside his tent, immobile on a cast-iron perch. It was then inhabited by a battler eagle. This had not been his father's first choice, but it had proven to be a strong and perceptive hunter. It had already driven off or captured five Sprites and a Fugitive during the prior week, as well as a shadow that could have been an Enemy. His father briefly warned when discussing these sorties, and held his hands out in front of him, one flat to indicate the instrument and the other in a fist for the invisible targets, weaving one around the other and smiling as he illustrated each interception.

The instrument's ocular globes were fabulously complex, incorporating twelve concentric irises, each sensitive to discrete segments of the temporal and nontemporal spectra. Additional perceptive faculties were chemically integrated into the humors surrounding the eagle's implanted eyes.

It was three times the size of any natural raptor, filling and shadowing the tent's interior, dark blue light reflecting from its acid-milled titanium feathers. Norce therefore wondered out loud why an instrument just one more order of magnitude larger had never been constructed. One large enough to accept the eyes and mind of a man.

His father's tone regained its distance as he explained that there were only a hundred real flyers left in the world, and the art of their construction had been lost for ages. It was enough to preserve the ones they had and be thankful for antiquity's gift which allowed them to protect their great men from the hostile spirits of the air. New ones of any sort could never be built. Men were therefore properly the inhabitants of the earth's and ocean's surface; they should build their towers no higher than was required for a modest grandeur and the purposes of terrestrial defense. They had no business in the sky; only their instruments could safely go there.

The two of them relieved the other falconer in the king's party that night. There had been a third falconer, but a Fugitive had seized him before he or his instrument could react. Fortunately, the instrument had not been harmed, and even captured the mad spirit as it departed the man's corpse. Then the implanted goshawk had been removed and incinerated with its captured soul. A black shahen had replaced it in the instrument, and it was this instrument which was on watch. The third flyer, with an inexperienced gyrfalcon inside, stood in reserve.

The other falconer reported all quiet and took the sha-

been instrument back to camp. Norce's father reviewed the watch log, noted the time, temperature, light, altitude density and the other aspects of the perceptible world that were relevant to the detection of spirits. Then he listened to the surrounding wilderness for what seemed to Norce to be an overly long time. "See anything?"

The boy looked up obediently, hurting his eyes with the setting sun. He found nothing aloft but a mortal kite. "Nothing at all?" The great instrument rested on its iron perch in front of them. Norce strained to recognize something suitably ominous. The sky seemed perfectly safe.

"There!" His father pointed, and the boy saw where the air had thickened. Then there was a smooth, whispering sound, like someone inhaling in the presence of an exhilarating danger. The instrument extended its wings, lowered its body for additional thrust and launched almost vertically from its perch. It oriented itself toward the patch of clotted air and accelerated upward.

"If we could do that ourselves . . ." Norce asked.

It rose above the target, gaining altitude to dive on it.

"We can't. We shouldn't want to. Look! What do you say? A Sprite? Fugitive? Perhaps even a true Enemy? We almost caught one before you arrived, you know!"

Norce strained to recall his lessons. "Not an Enemy. There's no nimbus of static discharge and no temporal evasions."

His father nodded approvingly.

"But it's a large distortion and has enough implied mass to allow me to see it."

"Should we bring it down?"

"We?" Norce was flattered. "We should, shouldn't we? With the king so near."

"Though if it's only a Sprite . . ." His father left off purposely, waiting for the boy to fill in the rest.

" . . . airy spirits of evil inconsequence / that prey on orchids and the wisps of clouds."

His father smiled at the quote from Spencer. "Good! But they have consciousness. An instrument with a good raptor inside can tolerate twenty or more of them, but they still leave a residue that accumulates in time and can then ruin the one flight that's really needed. That's how your great-grandfather lost a king-elect, you know."

"Sprites can also be manipulated by Enemies as screens and diversions. Then they're called Masks. But I don't think we have one here, because they're usually herded in groups then."

"So that leaves Fugitives, Unknowns and Tricks. The first two have always been dangers to the throne. They covet souls steeped in power and decision. And who knows about the last?"

The instrument was now barely visible, circling two kilometers above the ground. Then its wings disappeared. Norce blinked, and it had dropped more than a hundred meters straight down before he reacquired its silhouette.

"Strike!" his father whispered as the instrument's trajectory intersected the knot of air. It wobbled briefly, then continued downward.

It flared its wings at ten meters and opened its gold-sheathed talons. But the approach was misjudged and it overshot the iron perch, plowing heavily into the ground

to their left. Norce's father held him back. "Wait!" Then the falconer walked his boy around to the front of the instrument, so they could look into its face. The right wing was partially torn off, and hydraulic fluid seeped from the exposed joint. Electricity arced across jagged tears in the flyer's surface.

His father approached the machine carefully, testing the air in front of him with his hands. The instrument flopped weakly until it raised its head enough to fix them with its one undamaged eye; pieces of crystal and glistening humors spilled from the other socket. The good eye regarded them with restrained panic, the eagle's ruined nervous system pleading for recognition.

Fear weakened Norce's legs. *Enemy*, he concluded, the full text of each school treatise now clear, all diagrams fully recalled along with the secret, oral histories that had been endlessly recited to him: *Enemies were souls which were powerful enough to free themselves from their mortality and attain the sky through an act of will. Once self-liberated, anger against the discarded earth invariably consumes them and directs their actions. This is contrasted to Fugitives which depart their mortal bodies because of a prior madness, rather than the other way around.* Both had been human or nearly so. Along with those of baser origins, like Sprites and enigmas like Unknowns, they controlled the sky from a hundred meters above the ground, upward, the scholars taught, forever to the stars. The new fortresses and cathedrals of man covered below this domain; all the old constructions that still intruded up into it were haunted.

"It's an ancient battle," his father remarked that evening as he repaired the instrument. "And we three hundred falconers—in all the world—are the only ones who can fight it. 'Guardians of the lang,' and how the ladies love us for it. Even the praetorians envy us."

It was quiet outside. The king had already decamped, risking travel at night rather than staying below inadequately protected airspace. An escort of two more flyers inhabited by sparrow-hawks had been summoned to meet him.

"Could this be a Trick?" his father asked, pushing back from the machine. "Sprites are brainless and Fugitives are crazy. A true Enemy would have destroyed itself by now, if it hadn't taken us out first."

"I've never . . ."

"They're very rare. Lots of stories, but not much real evidence. They were supposed to be the spiritual contemporaries of the instruments themselves. *Built by men at the same time—completely artificial—and set free in spite when the flyers were . . . expropriated by the great houses of the world.*" Then he leaned back over the instrument and picked up his jeweler's tools. "Perhaps not so remarkable . . ."

"But if this is one of these creatures, don't procedures require cremation?" Norce felt very brave in suggesting this.

His father did not seem to notice the remark. Instead he raised his hand and pronounced judgement: "I believe it to be a Trick. An artifact as old as the instrument that captured it and which it may now still inhabit. It's possible it came from the same builder as our instrument."

Norce was instantly seized by this idea. "Then the in-

telligence now inhabits the machine, instead of the eagle's mind?"

His father pressed a sequence of points on the instrument's head with his protected hand. The functioning eye dulled and closed.

It showed no signs of conscious inhabitation during the night. At dawn, they brought it out into the open space where the king had been encamped. The back of the flyer's head and spine opened and the neural interfaces automatically withdrew. His father dissected out the eagle's remaining eye, brain and spinal cord and quickly placed them on a pyre of magnesium shavings.

Both men braced themselves against the psychic scream of the incinerating intelligence. The morning remained undisturbed.

When everything was turned to white ash, Norce's father returned to the instrument and washed its interior with hydrogen hexafluoride and bioscouring agents. The panels were closed without installing a new raptor.

The falconer executed a command sequence on the concealed buttons. The machine's neural cavities were empty; all its bioelectrical circuits were open and unbridged, yet it leapt to its perch, arranged its wings and centered its head. Its gaze was intensified by the absence of living eyes inside its ocular globes. Thus its pupils were unnervingly large and inquisitory, and Norce's father quickly placed the hood proper, made of cloth-of-gold and embroidered with circuit lines, over its head. He spent the next hour probing the machine's structure with his hands, attaching instruments to the hood or standing back at various distances to gaze at it or up at the sky.

They cooked dinner and slept beside their instrument. Inhabited flyers shifted while in repose like the real birds within them, but now the instrument was motionless unless his father removed the hood; then its head would swivel around in three or four quick movements, taking in the whole of the night sky before returning to its original position. The spirits were generally quiet at night, only rare Enemies with small escorts of Masks were thought to fly then, so there was little to be concerned about.

The machine was animated by dawn light. As soon as his father removed the hood proper, it exploded upwards, executed a climbing turn to the right and then dove back to its perch. This flight required nine seconds.

"Sprite?" Norce asked when he recovered his breath. "An Unknown, or just a show to impress us?"

The instrument's eyes revealed nothing. His father replaced the hood and took more readings. "Too weak to register outside random error. It was probably nothing. But even if it was, there's nothing inside now to purge if it did snag something."

They set out after breakfast to rejoin the king, whom they overtook the following noon. He personally welcomed them, to the displeasure of his other falconer. The black shahreen's hunting style was too placid for the king, and his majesty said he was greatly relieved by the protection their instrument restored to his party.

The king's mood was further improved when their instrument repeated its morning sortie ten minutes after they arrived. This time there was a confirmed target that was

not spotted until it was only two hundred meters above the royal person. The shahreen detected the target at the same time, but theirs rocketed up from its perch, flaunting its incredible acceleration by climbing in a tight spiral instead of a straight path. It intercepted the pulsing knot of air from below on the first pass without seeking any advantage from superior altitude. Norce had been taught that this was a tactical impossibility. The king signified his admiration by giving Norce's father his ivory-hilted dirk on the spot.

No one noticed the size of the instrument's eyes. Norce's father quickly placed the hood proper over its head and conveyed it away for supposed purification. Norce remained in camp, knowing that there was nothing that could be cleansed from the machine, nervously deflecting the king's and his other falconers' questions with the lies he and his father had rehearsed all the previous day.

In their tent that night, his father wondered if the instrument had either found a way to annihilate the spirits it captured instead of just containing them, or if it had evolved some way to accommodate such presences and still function. If it was the first possibility, he said dreamily, the sky might be cleansed and men could travel through it again, as legends argued they once had. The implications of the second theory were less clear. Having little mass, Sprites or Fugitives might be stacked one on top of, or within, the other without practical limit. "But," the older man continued in the dark, "no instrument has ever accommodated more than thirty captured intelligences before the resident nervous system lost coherence."

There were no more threats to the king after that. Their instrument may have found an isolated Sprite as they neared the capital, for it flew off in the morning haze for fifteen minutes. Its eyes revealed nothing when it returned, so the easy conclusion was that the sortie had been unsuccessful.

That fall, their flyer beat out three other instruments in bringing down a confirmed Enemy that had penetrated the capital's precincts under the cover of a thunderstorm. It had appeared as a ball lightning, darting and drifting to evade casual detection as it stalked the king, who was enjoying the storm from under a covered promenade. There was a terrific explosion as the flyer captured it, again attacking from below before its watch companions had even begun climbing for altitude.

Intercepting something that powerful would have left a conventional, inhabited flyer incapable of controlled flight. This machine, however, merely circled the spot where it collided with the entity, letting static discharge over its body before gliding back to its perch.

His father was awarded with a leather hawking gauntlet, embroidered with seed pearls. Norce was presented with a girl three years older than he was, but found it difficult to receive any pleasure from her.

The instrument's hunting radius increased to take in the whole of the royal estate. The king instructed Norce and his father to each attend him with their instrument for half the day, so that he would be constantly protected. He was therefore able to move with impunity through his domains, and the jealous rulers of neighboring states,

walking bent from their ancestral fear of the sky, sent saboteurs to bring him back down to their own fearful mortality. Praetorians dealt harshly with these agents. The kingdom prospered, even to the extent that some men discussed returning to the sky, first by reclaiming the hermetic towers of ancient cathedrals and then, more boldly, in devices of ash and fabric such as were depicted on the mosaic floors of those same buildings.

But his father knew the intelligences were accumulating within his instrument. The ritual of purgation after each inevitably successful interception was abbreviated to a visit to a darkened room, and the weight of this secrecy began to weigh visibly on him. It required, after all, lies to those he was charged with protecting and the concealment of conceivably greater dangers. He had lost count of how many spirits the instrument had captured and cursed himself for not having kept careful records of its hunts. "If they live forever in it, if they *interweave* their sentience with our flyer's structure, then . . . transformations might occur. This is all unheard of. Falconers are men of unbroken traditions, but this knowledge is new. Either that, or old past my imagining."

Clearly torn between his excitement with hunting the greatest instrument in memory and his growing fear over what it was becoming, his father attempted to secretly implant the mind of a peregrine, which was agreed to be the strongest of all the raptors that could inhabit a flyer.

It seemed to change for a few days. The machine's pupils were naturally reduced to a natural size, now having the raptor's eyes locked within its own, and it hunted much nearer to the palace, utilizing conventional tactics. But then its coordination deteriorated, and when his father opened the cranial vault he found that the peregrine's mind had been burned to white ash.

He reassembled the machine empty. Its eyes opened at once, and the vast pupils stared at them before rotating toward the zenith. Then it leapt up and was gone hunting until the sun set.

Norce watched his father decline after that. The fear-love that the scholars had warned about was betrayed in the man's gestures and choice of words when he spoke about his instrument or prepared to go on watch with it. The man aged accordingly.

Norce would have sought help or at least warned the court, but he had so strengthened his own mental defenses that he could by now barely communicate with other people at all, let alone explain what he feared was happening. He knew that if he and his father had not already committed treason, they had surely partaken of heresy. By winter, he did not even dare try, for the machine anticipated him too well. It watched him and the sky in the same ways, until Norce wondered if it could see his own spirit and anti-spirit, frozen inside him, hound by locked hopes and aphasic emotions.

Finally, his father did nothing but drone on hopefully about the instrument and how any danger accumulating inside it would still be less than what remained aloft. Norce never chanced a reply unless the machine was at least five kilometers away. He was terrified that if the old man went mad, a Fugitive might be created at the moment

of his death. Then, he believed, he would be obligated to hunt his father's spirit shadow with the instrument, having no idea what would become of it after its capture.

The old man's flesh collapsed around his bones. He avoided movement and then even speech. The king no longer visited him or his son when they were on watch, although he insisted they remain at the service of the crown. Many of the other falconers left the kingdom or petulantly neglected the condition of their own flyers.

In April, however, his father abruptly announced he had calculated that the instrument had captured more than a thousand intelligences since it had been occupied by the Trick. He declared the machine's interior to be an anarchy of malign intellects, and said he imagined that only the instrument's or the Trick's own desire to perpetuate itself and gather the entire sky's inhabitants into itself for a final destruction kept any order at all. "Or for an apotheosis. Could that have been what the original builders had originally intended? Could we have the only complete flyer in the world? The only one that is just as it was when it was first constructed, and that it was then that the spirits first fled from them into the hearts of men, and only afterward into the sky?" His voice crackled as he saw beneath all the teachings of his youth and vocation.

Norce heard the words from some great remove, so complete were his emotional defenses and fatigue. He had lost all his peripheral vision while distracted by his father's speculations. By imperceptible degrees his body failed as his mind tried to increase its distance and self-containment, instinctively employing the falconer's arts. Then the distance increased uncontrollably and the sense of spiritual acceleration tore at him with a tidal force, until his mind buzzed within his emptied body like a fly in a bottle.

He observed the flyer through a newly vacated eye-socket. The machine returned the stare with equally empty eyes that were nevertheless charged with energy. Norce felt his mind drifting up, away, and urged himself along to escape. The horizon was discernible, but he could not understand its significance; orientation was impossible.

High above, toward the zenith, where it was least painful to look, there was a scattering of luminous points, clustering thickly enough to suggest nebulae. Because his attention was directed upward he did not think of the instrument's customary climbing attack, and was only aware of it when the speckled blue of the inhabited upper atmosphere vanished in the flash of interception. Darkness followed in which his spinning was arrested.

Norce looked around and saw only through the flyer's eyes. The elaborate interior circuitry encircling them gleamed in reflected sunlight. He moved forward to these windows, recalling his old dream of flight.

He reached the eyes and looked down onto the parapet from which he and his father had kept watch. He saw the cast-iron perch the instrument was descending to and the palsied figure of his father bending over his corpse. The old man looked up in fear at the returning machine. Then Norce became aware of the other intelligences that were packed into the machine and of the sky's implacable contempt for man. ♦

Fifteen-Love on the Dead Man's Chest

Charles Sheffield



Illustration by Bob Walters

"Everything," Waldo said morosely, "is *relative*."

He slumped low in his office chair, a man bearing the weight of the whole world.

I nodded in mute sympathy. He was right, and there was little that I could do to console him.

"It's ridiculous," he added. "I mean, it's not as though I was *dead*."

I could only nod again and reflect, not for the first time, that there ought to be a collective noun to describe the group of relatives who, unseen and unheard from since early childhood, rush in after a family death to attend the reading of the will and to fight over the best bits of furniture. A *concupiscence of nephews*? A *grab of grandsons*? A *covet of consins*?

Except that in Waldo's case, none of these applied. He was merely the victim of circumstance. As he rightly remarked, he was not dead, and nothing but pure coincidence had decreed that, in the same month

of the same year, a major tennis tournament and the solar system's largest morticians' convention would be held in Luna City. And long before that, nothing but blind fate had persuaded his maternal aunts, Ruth and Ruby, to choose for their soulmates a wealthy tennis fanatic, Pharaoh Potter, and a leading undertaker, Mortimer C. Wilberforce.

The four had moved far away, to Mars in the case of Pharaoh and Ruth, to the Venus Domes for Mortimer and Ruby. But now they were back. Pharaoh, after many years of talking about winning a tennis tournament, had actually entered as a player in the Luna Senior Doubles, and Mortimer C., still obliged to work for a living, was enrolled in a Do-It-Yourself embalming course on the other side of the city, while also taking in the convention, plus the occasional funeral, for entertainment.

Simple pleasures, you might say. The bad news was that both wives and husbands were staying with Waldo; and by their attitude the four members of the Potter and Wilberforce party were making him most unhappy. As he complained to me, they pushed him around all the time. He didn't know how to argue with them.

It's a baffling thing. You have one man who spends his whole life hitting a little ball so some other half-wit can hit it back to him, and another who paints up dead bodies so they'll look nice and healthy when they're burned or buried. You have their two wives, who do nothing at all. Yet *all* of them look down on Waldo, because he is a lawyer.

And it's not as though Waldo had plenty of time to entertain his odious relatives. Quite the opposite. He and I, after several slow months, had just become busy with what could well be the biggest case of our careers.

It had begun with no more than a rumor. There are certain words that will start one, anytime or anywhere that they are whispered or even breathed.

Try this word: *immortality*.

But to Waldo and me it had been no more than a rumor. In Luna City rumors are as common as cockroaches, and about as fast-moving.

All that had changed, though, with the late night arrival of Imre Munsen at the offices of Burneister and Carver, Attorneys-at-Law.

Imre Munsen, Special Investigator for the United Space Federation; Imre Munsen, my nemesis, convinced despite much evidence to the contrary that I was, like him, a starry-eyed, patriotic hero with nerves of steel. Imre Munsen, with the authority to force anyone to do anything that he asked.

Imre Munsen, idiot. I never wanted to see him again. But there he was, sitting in Waldo's favorite chair and shaking his rugged jawed head at us.

"Perhaps not a mere rumor, gentlemen. There may be a lot more to it than that. Here's what we know, for certain sure. Carlo Moolman flew to Luna last week, from Oberon. He claimed, and he wasn't bashful about it, that an inventor out there had discovered an 'immortality serum.' Moolman said he actually had a sample with him, a little phial of liquid. He didn't claim it would let a person live forever, but he did insist that it would in-

crease your life expectancy to a thousand years. He wanted to sell shares in its development and marketing. What does that suggest to you?"

Waldo and I exchanged glances.

"A confidence trickster," Waldo said firmly. "Looking for suckers. Everybody knows there's no capital available on Oberon."

"True." Munsen leaned forward, and gave us his patented steely-eyed glare. "And Carlo Moolman does happen to have a criminal record. But suppose this time it's different. *Suppose this time he's telling the truth?*"

"I wouldn't put any money on it if I were you," I said.

"Maybe not. But the USF *has* to take the possibility seriously. Can you imagine what an immortality serum would do to the solar system?"

Waldo suddenly took on a mournful air. I think he was imagining Ruth, Ruby, Pharaoh and Mortimer staying with him forever.

"I don't understand this," I said. "Carlo Moolman came to Luna, and presumably since you didn't say he left, he's still here. Why not take him in for direct questioning? If it comes to that, why not go to Oberon and question the inventor of the serum?"

"Excellent thinking, Mr. Carver," Munsen favored me with a flash of white teeth. "We can't do that, for two very good reasons. The inventor is dead; and so is Carlo Moolman."

It was not difficult to spot a certain weakness in Imre's argument. "Two men with an immortality serum," I began, "and both are dead—"

"But not of natural causes, Mr. Carver. I don't know about the fellow hack on Oberon, but I saw Moolman's body. Somebody blew a hole in his belly, big enough to put your whole head through."

A less appealing course of action was difficult to imagine. I suggested as much.

"And of course," Munsen went on, as though he had not heard me, "there was no sign of the immortality serum on his body."

"Might he have drunk it himself, or hidden it somewhere on or in his body?"

"Not according to the autopsy. No," Munsen stood up and began to pace around the office. "I think that if it existed at all, he hid it. But where? There must be a clue, somewhere. We're looking, you can be sure of that. Meanwhile, his funeral is the day after tomorrow. And of course, his enemies may attend—the people who killed him. They're as keen to get their hands on the serum as we are. It's important for us to know what they are up to."

"So you and your men will be there," I said slowly. I didn't know what was doing it, but I felt an uneasy creepy sensation up my back, as though a Hoidalgan centipede was ascending under my shirt.

"Me and my crew can't do that." Munsen shook his head firmly. "We're too well known; we'd be recognized in a minute. Anyway, we'd have to more or less force our way in. What we need is someone who can be invited to the funeral in a natural way. Someone like Mr. Burneister—whose uncle, as I understand it, is a big

wheel in mortician circles and could get him invited into almost anything connected with funerals."

I felt a giddy sense of relief. The Angel of Death, diving-bombing in on me, had suddenly veered aside and picked the next man in line.

"Of course," I said.

"Of course not," said Waldo.

"Actually, Mr. Burmeister is correct," Munsen agreed. "He won't quite do. He is—with all due respect, Mr. Burmeister—rather too conspicuous because of his size. We need someone less noticeable, someone who can keep a low profile, blend into the background. Someone like—"

"I don't know Uncle Mortimer. I'd never get invited to the funeral."

"Mr. Burmeister could invite you to dinner at his home."

"I don't have the right clothes for a funeral."

"They will be provided. Black top hat, dark cutaway coat, black polished shoes, everything."

"And if you just let Uncle Mort talk corpses to you for an hour or so, Henry," Waldo said cheerfully, "he'll be so tickled he'll get you invited to any funeral on the Moon. He's been trying to drag me to one for days. What a pity, as Mr. Munsen says, that I'm too conspicuous." Waldo stared down happily at his ample belly, and hugged his fat to him like a protective shield.

I wondered, in a hopeless sort of way, how much fat a human being could put on in a couple of days. Not enough, I felt sure, to save me.

Waldo had described the family dinners to me, but I had discounted much of what he said. Having seen Waldo's own prowess with a knife and fork, I deemed it remotely improbable that anyone at a meal table could deprive him of his rightful share of sustenance.

That, of course, was before I met the Potter and Wilberforce wives.

I arrived a few minutes late. Waldo was busy in the kitchen, and at my first sight of his living-room when I entered, it seemed totally filled with aunts. A second look revealed just one massive pair, trampling and trumpeting like angry mastodons over the mangled ruins of trays of hors d'oeuvres.

Ruth and Ruby were a year apart in age, and perhaps two kilos apart in bulk. There was less difference between them than the mass of any one of their many chins.

I used to blame Waldo for being fat, but after I saw his aunts I vowed never to accuse him again. With such genes, he didn't stand a chance. In fact, it was a tribute to the size of Ruby and Ruth that Pharaoh Potter was not himself a noticeable landmark. He was a big-framed man, well run to speed now but still possessing plenty of muscle on arms like a gorilla. He shook my hand, in a grip that mashed my bones together.

"Play any tennis?" he said.

"Haven't for a while, I used to." It seemed the safest answer; express interest, but don't let yourself get dragged into any possibility of playing. I did not know it at the time, but my reply exhibited an uncanny prescience. "I never was much good," I added.

"Because you're little and weedy," Pharaoh replied. "A person needs some *weight* to make decent tennis shots." He went off to sit in the corner with his head bowed. He was a man apparently in the grip of some great sorrow.

I turned to Mortimer C. Wilberforce, just as Waldo called us through for dinner. Mort was the odd man out in the group, a function I suppose of his job. It's probably a sort of professional requirement among morticians, that if you can't actually be a corpse, you ought to look as much like one as you can. Mortimer did his best. If he had been the right height for his weight, he would have been about four-foot-two. As it was he was six-five, and pale as a well-blanching stalk of celery.

I suppose he ate, but in this he was rather like a government official working. No matter how long and hard you looked, you would never see it happen.

From my point of view, his behavior at the dinner table had one great disadvantage. I wanted to talk to him, but like a mute at a funeral he had no conversation and no apparent interest in anything. He seemed half asleep. It was left to the others, and Pharaoh in particular, to make the running in the talk department.

Which he certainly did. According to Waldo the dinner table conversation usually consisted of a catalog of deficiencies, Waldo's personal ones and that of the free food that he was providing. Tonight, however, another concern predominated.

Pharaoh Potter's tennis partner had become disabled, and would be unable to play the next day. Pharaoh seemed to regard this as an Act of God, although he admitted that the other's injury had occurred when Pharaoh knocked him flat and ran right over him.

"It was actually his own fault," Pharaoh explained. "He was poaching. The ball was clearly in my territory on the court. He should never have been there at all."

"But now, my love," said Aunt Ruth, "you have a problem. You need a partner."

"Yeah, I know," Pharaoh glanced along the table. I could see him dismissing me.

"Little and weedy." Well, better that than a great fat lout.

Mortimer, as the closest living relative of the stick insect, received an even lower approval rating. Ruth and Ruby were clearly A-1 in the weight department, but they had the great disadvantage, for a men's doubles, of being females.

That left . . .

I saw Pharaoh's eye rest on Waldo, who was fighting the good fight for his share of the victuals.

I watched the wheels turn. Adequate weight, certainly. Apparently in good health, as anyone must be who could hold his own with Ruth and Ruby in the struggle to be at the top of the food chain. Available tomorrow, since lawyers never did any useful work.

"Waldo?"

My business partner, distracted in his tug-of-war with Aunt Ruth over a dish of sliced green beans, turned to face Pharaoh.

"What?"

"You. You can be my tennis partner tomorrow."

"I cannot!" Waldo, in an excess of emotion, lost his grip on the plate of food.

"Of course you can, Waldo," Aunt Ruby said firmly. "You know how to play. I've seen you."

"When I was a child!"

"It's like riding a bicycle. You never forget."

"I have to work tomorrow."

"Nonsense. You can take a day off." Aunt Ruth turned to me. "Can't he, Mr. Carver? You can spare him, can't you?"

It was time to come to the aid of my old friend and colleague. But I could not forget that I was supposed to attend a funeral tomorrow, where more than likely people would be trying to kill me. Compared with that, a tennis tournament was nothing. And Waldo had been more than happy to throw me to the wolves who had murdered Carlo Moolman, so long as he didn't have to face them himself.

I nodded. "I can spare him."

"I don't have a tennis outfit." Waldo was grasping at straws.

"As it happens, I have one in the next room." Pharaoh stood up. "I bought it for my old partner, but for some reason he refused to wear it. He's just about your size, too."

He was back in half a minute. In his hand he held a tennis outfit. Waldo gave it one appalled glance.

"You can't expect me to wear that! Look at the color!"

"What's wrong with it? A nice, warm brown."

I realized at this point that Pharaoh Potter must be color blind. What he was holding was the most hideous shade of hot pink I had ever seen. If Waldo were that, he ought to be arrested for multiple offenses against society.

Waldo thought so, too. "It's hideous," he said. "Isn't it, Henry?"

"It is. But you can have it dyed."

"Mmph?" Mortimer jerked into life at my side. "Who died?"

He was awake at last. I had found the magic word. Leaving Waldo to fight on alone, I seized my chance, and threw at Mort a snappy series of questions on the theory and practice of embalming.

In five minutes, as Waldo's weakening howls of protest rose from the other end of the table, I knew I had Mortimer C. Wilberforce eating out of my hand. Certainly he knew the right funeral home directors. Surely I would be welcomed at the final rites for my friend Carlo Moolman. He would arrange it. What a pleasure it was to meet a man with a proper interest in funerals. All he asked was that I not embarrass him by wearing inappropriate dress.

I was able to reassure him. On that sort of detail, Inre Munsen was infinitely reliable. I promised that I would actually arrange for the outfit to be delivered to Waldo's home tomorrow, so that Mortimer could review it personally if he so chose. He didn't seem to think that would be necessary. When I described the promised clothing to him, he nodded approval of every last stitch.

For his part, Mortimer assured me, if he was not present himself when I arrived to change into my funeral

garb, he would make sure that directions to get to the funeral home—one of Luna City's biggest and most prestigious—would be written on a little yellow card and left on the hall table.

Dinner was over, the evening's work was done. I made an earlier than usual departure. Waldo was still fighting a rear-guard action, but I knew already that he had lost his argument. He would be Pharaoh Potter's tennis partner tomorrow. It served him right for abandoning me to Inre Munsen. Still, I had to leave. It gave me no pleasure to see a grown man's misery.

I thought that I had allowed plenty of time to get dressed after I arrived at Waldo's home the next day. But there must be a special technique for getting into funeral clothes, one that I didn't have, and Uncle Mort was not around to help. I struggled with the shirt, with the tight collar of the shirt, with the studs of the shirt, with the tie, with the shoes, with the laces on the shoes. When I finally had the shoes on and tied, I had to take them off and start again, because I couldn't get into the trousers unless I was barefoot.

I was already late when I ran downstairs, grabbed Uncle Mort's little yellow card from the hall table, and hurried out. Then it was bad luck again. It was ten more minutes before I could flag a groundcar cab to take me through the complex multiple domes of Luna City toward my destination. I had never heard of the address of the funeral home, but that was no surprise. Luna City just grew and grew, bigger and more difficult to navigate around every year.

Traffic was hell, and half the time we didn't seem to be moving at all. When I at last paid off the cab, I glanced at my watch. I should have been here twenty minutes ago. Did funerals run on schedule? As I hurried inside and along a dimly lit and seemingly endless tunnel, I wondered if funeral reporters had a special word to describe people like me, who did not arrive on time for the ceremony. "The late Henry Carver" would be too confusing.

The tunnel made a final right-angle turn, and abruptly ended. I dashed the last ten yards and emerged into a large open space.

Suddenly I had trouble breathing.

Perhaps it was the tightness of my collar, cutting off the blood supply to my brain. Perhaps it was the light, far brighter than I had expected.

Or perhaps it was the fact that everyone standing close to me was dressed in tennis clothes, while all around me a crowd of maybe two thousand people roared with delight at my appearance.

In my surrealist daze, I saw one familiar face: Pharaoh Potter. I went to him.

"There's been a mix-up," I said. "I got the wrong address card. I'm going now. I'm supposed to be at a funeral."

I started to edge away, but Potter grabbed my arm.

"Are you trying to tell me that Waldo's not coming?"

"I guess not."

"But he's my partner!"

"I'm sorry about that. I have to go." I tried to pull away again.

But Pharaoh still held my arm. He stuck his red face close to mine. "I didn't travel fifty million miles, and get this far in the tournament, not to play. You stay. You're going to be my partner. You said that you know how to play tennis."

"That was twenty years ago! I've forgotten."

"Then you'd better learn again, real quick." He raised his racket, and his muscles bulged. "Unless you want to leave here with a couple of broken arms and a concussion, and your liver tied in knots."

Pharaoh certainly had a way with words. Five minutes later I had been equipped with a racket and stood waiting to receive service.

It had not been an easy few minutes. The crowd, pleased already by my initial appearance, was ecstatic to learn that I would stay to play. The wits among them went to town.

"Five to two against Gravedigger Jim and Fat Jack Sprat!"

"Done! They're bound to win once their reinforcements get here—you know pallbearers always come in sixes."

"Ashes to ashes and deuce to deuce."

"Hey, Mister Undertaker, don't ask me to stay for your service."

Our opponents also did not escape the notice of the masses. They were Mason and Mulligan Coot, two shingly bald-headed and bowlegged brothers of like age and physique, once presumably athletic, but now only slightly less creaking and musclebound than Pharaoh Potter. They seemed to blame me for the unwanted attention, and they seethed at us across the net while the crowd gave them their moment of glory.

"New balls, umpire. Those two have lost all their fuzz."

"Come on, the bandy-Coots. Show a bow leg there."

"What did Gravedigger Jim say to the Cootie brothers? 'Who'll inherit your money, when you've got no hair anymore?'"

Even bad things must come to an end.

"Play," called the umpire. Mulligan lifted his racket.

One second later, a head-high serve that I only just saw went like a bullet past my right ear and on into the crowd without touching the ground.

"Out," called a line judge.

"Well left!" cried Pharaoh Potter.

"Second service," said the umpire.

Mulligan raised his racket again.

I saw this one coming clearly enough, but I failed to hit it.

"Out!" shouted Pharaoh optimistically.

"Got to move faster, Gravedigger Jim!" cried someone in the crowd. "Stop imitating your clientele."

"Fifteen-love," the umpire said. "Quiet, please." But he spoke without much hope in his voice.

Things did not improve as the match went on. I had dispensed with my top hat at the outset. After a couple of minutes of running about in stiff black leather shoes,

I was forced to take those off, too, or blister my feet beyond bearing. Soon after that, the heat of battle led me to remove my jacket and tie, and to open my shirt all the way down my chest.

At that point the coarser elements of the crowd, for whatever reason, changed their line of attack. They now affected the conceit that I was neither a tennis player nor a pallbearer, but a male stripper.

"Let's see them flowered undies!" they called. And "Don't be shy, sweetheart, give us a peep at your wedding tackle," and "Take 'em off, take 'em all off!"

With such distractions, it is not easy to play one's best. It is, in fact, not even easy to play one's worst. Pharaoh Potter and I began disastrously, four games without a single point, and we would surely have continued that way had not I, in the middle of the fifth game, stuck my racket in the way of a speeding topspin forehand, miss hit it, and accidentally popped the ball way up into the air for an easy mid-court smash.

Mason was standing waiting, in a perfect position.

"Mine!" he shouted to his partner watching at the net.

"Hit it ha-a-a-a-rd," Mulligan roared.

Mason did. Stepping back a couple of paces, he drove the ball with supernatural force and accuracy straight into Mulligan Coot's open mouth.

The line judges pried it out all right, with a little bit of effort; but after that the Mason/Mulligan combination was never the same.

Mulligan, you see, was convinced that brother Mason had done it on purpose. The next time Mason was up at the net, Mulligan took careful aim and sent his rocket first serve smack into the back of his partner's bald head. The ball rose about a hundred feet in the air before it came down—on our side of the court and in play, oddly enough, but of course the point was already over.

Their game went rather downhill from there. With neither of them willing to approach the net for fear of flesh wounds, and each trying to make sure that he stood at all times safely behind the other, anything of ours that managed to creep over the net to their side of the court became a near-automatic winner.

Even so, it was far from a rout. They still had power, and when they could not aim at each other their shots came screaming across the net like artillery shells. On our side, we swung and sweated and cringed and sliced and hacked. Pharaoh lashed out in a ferocious half volley at one ball right at his feet, then had to take a break to pry his mutilated left big toe from between the strings of his racket.

I was not without my own problems of timing. I flailed at one of Mulligan's whizzing forehands and missed it completely. The ball flashed past my questing racket and vanished inside my open shirt. No one—partner, opponents, umpire, or onlookers—had any idea where it had gone. It was not until I wriggled and squirmed, and the ball to the crowd's delight appeared from the bottom of my black trousers, that the point was decided.

Even that infuriated Pharaoh Potter. "You should have kept it hid," he growled at me. "They hit it last. It would have been called out."

Pharaoh wanted to win in the worst way. As we went on, I realized that might be exactly the way we would do it. On the other side of the net, Mulligan and Mason cursed and hollered at each other, ran backwards far more than they ran forward, and tried to return the ball only when their brother and preferred target was nowhere in the field of view.

We lost the first set but we won the second one easily. The third and final set, however, was something else. Pharaoh Potter was too fat for sustained running and I, while trim, had the muscles and stamina of one whose daily exercise seldom went beyond lifting a restraining order.

Mulligan and Mason had started in better shape, but since the fifth game they had been continuously running to get behind each other, and shouting brotherly oaths and accusations as they did so. They were also peppered with round pink impact marks, and they sat at courtside longer and longer between games.

The match in its third set went the way that I rather imagine the heat-death of the universe will go, entropy increasing to a maximum and everything gradually running down.

Pharaoh and the Coot brothers were built for short sprints, not for endurance events. Rocket serves became light zephyrs that drifted over the net. Returns, if they happened at all, floated through the air like summer thistle-down. Protests at line calls became increasingly feeble.

As the pace slowed, the crowd quieted. Only our anguished sighs and despairing groans punctuated the gentle ping of ball on racket.

It went on for an endless age, and I knew it would go on forever. So it was a great shock to look up at last at the scoreboard, and find that Pharaoh and I were leading by five games to four, with my serve to come next. I was in a position to win the match.

At that point, the crowd became totally silent. I think they realized that they were witnessing something unique in tennis history. After all, how many other final games of a tournament match have been played with three of the four contestants sitting down?

It had been hard on all of us, but the other three were carrying twice my weight. For the final game, Mason Coot sat in the middle of the court. His brother slumped a few feet in front of him, all fear of violence from behind long since past. On my side Pharaoh was close to the net, lying face-down on the center line.

All I had to do was serve to the right part of the court and we would win, because no one else would move no matter where the ball went. It gives some idea of the quality of my play when I confess that the game went to deuce seven times, before the umpire could at last proclaim, "Game, set, and match to Potter and Carver."

The crowd swept onto the court and carried us off. They had to. The victory ceremony was conducted with all parties lying down.

Pharaoh and I not only won our match, we won another prize, too. It was a special award, given for the contest that in the opinion of the crowd was the most

enthralling of the day. No one else, I gather, came even close.

I thought that Pharaoh Potter might be offended about that, once he had somewhat recovered. But not at all; to him, a tennis trophy was a tennis trophy, however won. He was thrilled, and when he could again stand up he insisted on taking us to the pavilion and buying me and the Coot brothers, our good buddies now, as many drinks as we chose to take in.

In our depleted condition, that turned out to be rather a lot. It was maybe four hours later that I was buttoning my shirt, seeking my shoes, and reflecting to myself that it had been, despite a bad beginning, a perfect day for me as well as Pharaoh. I had never before, in my whole life, won anything in an athletic event. It is strange what such an experience can do to a man's mind.

A perfect day, I thought.

I wrinkled my brow.

Perfect?

That didn't seem quite right. Shouldn't it be *almost* perfect?

Something started to drift back into my muddled consciousness. Hadn't I been supposed to go to a funeral?

I had. Carlo Moolman's funeral. What about that, and what about the immortality serum? If I had come to a tennis match instead of a funeral, then was it possible that . . .

For the first time in many hours, I wondered what had happened to Waldo.

Waldo had been late for his appointment, too, but for quite different reasons. The bleach had worked reasonably well on his tennis outfit, enough to mute shocking hot pink to a pale, fleshy tone. However, the washing process had produced an unforeseen side effect.

The tennis outfit had shrunk. A lot. Waldo managed to squeeze his bulk into it, but only with enormous effort. It was like a second skin. When he caught a glimpse of himself in a full-length mirror, the combination of tight fit and fleshy tones produced the momentary illusion that he was staring at a stark naked Waldo Burnmeister.

He shuddered, but there was no time to change. Not that he was sure he could; getting those clothes off promised to be even harder than putting them on.

He glanced at a clock. He was *late*, late as he could be. Uncle Pharaoh would kill him.

He grabbed shoes and tennis shoes, picked up the little yellow card that Pharaoh Potter had left on the hall table giving directions how to reach the tournament, rushed barefoot out into the street, and hailed the first cab that he could find.

He held out the card. "This address, fast as you can get there."

The cabby, Waldo insists, was struck dumb by his appearance. This, if true, does much to support Waldo's claim of looking something well beyond the mundane, since Luna City cabbies are not easily silenced. However, the cab made excellent speed, and when Waldo was dropped off in front of a huge circular building he gave the driver a big tip. It was only as the taxi vanished from

view that he realized that he had left his socks, tennis shoes, and wallet on the cab seat.

No time to pursue them—Pharaoh Potter would be chomping at the bit. Anyway, Waldo could borrow shoes and socks before the match. He hurried into the building's entrance foyer, which struck him as unusually somber, silent, and formal for a sports pavilion.

There was just one person to be seen, a wizened individual standing at the other side of the room and apparently guarding the players' entrance.

Waldo padded to him across cold marble tiles. "I'm a beginner at this sort of event," he said.

The man, who according to Waldo had the air of someone wearing a previously owned body, stared at Waldo's attire. "I can see that."

"So I wondered if there's a special warm-up area, for people who don't do this sort of thing regularly."

It was a natural enough question, but the man was more than unresponsive. He was eyeing Waldo with odd suspicion.

"No," he said. "Everybody has to go the same way. Right in there, and follow the line. Slowly now. No rushing about once you're inside."

It was an odd injunction. How did you ever win a tennis match, if you didn't do a certain amount of rushing about?

Waldo went through the door and found himself facing an altogether excessive abundance of flowering plants. There were floral arrangements everywhere. The tennis courts, he decided, must be on just the other side of all the shrubbery.

He pushed aside a great mass of greenery. He blundered through. As he emerged into subdued lighting and soft music, it crossed his mind for the first time that perhaps things were not quite what they seemed.

Where was the net, where was the court? Where were all the other players?

Not, he was fairly sure, anywhere near here. He was standing in the middle of a group of maybe twenty people. But it was difficult to accept them as participants in a tennis tournament, since every man was clad in a customary suit of solemn black, while the women were all hatted and veiled. The whole line was moving slowly toward a dais, on which stood an elaborately carved casket. Waldo, willy-nilly, moved with them.

His present attire had made his flesh crawl, even in the privacy of his own bedroom. Now he realized what an overreaction that had been. All crawling of the flesh should have been saved for this moment, when every eye was on him and the moving line bore him irresistibly toward the dais. Soon he was approaching the coffin, wondering what to do next.

Waldo is given to exaggeration. It may well have been, as he said, an open-casket ceremony. It is not, I am sure, true that the corpse of Carlo Moolman rolled its eyes in horror at Waldo as he walked to stand by the coffin.

Carlo had been arranged to look his best for his final appearance. He was wearing a white shirt, a well-cut suit of subdued grey with a dark red pinstripe, and a meroon bow tie. Waldo stared down at those conservative

clothes, and he coveted them. He was already dreading the return journey home, penniless, on public transportation. Just give him ten minutes alone with that corpse . . .

It was pure wishful thinking. Already the line was moving on, past the open casket. And it was then that Waldo became aware of something else. Everyone was staring, but they were not all looking at him the same way. Two men, standing on the other side of Carlo Moolman's open coffin, had in their eyes a strange and speculative gleam as he moved past them.

Big men. Hard-eyed, tough-looking men. The sort of men who would cheerfully blow a large hole through Carlo Moolman, then attend his funeral in the hope of learning the whereabouts of the missing immortality serum.

Waldo hadn't listened to much of what Inre Munsen said, because the words seemed at the time to have little relevance to him. But he remembered this comment: "Of course, his enemies will attend—the people who killed him. They're as keen to get their hands on the serum as we are."

It occurred to Waldo, with the force of revelation, that he and he alone knew exactly who those enemies were. They still didn't have the serum, but it must be somewhere close by. Somewhere, probably, within this very funeral home.

Then came what Waldo described as his finest moment; or possibly, depending on your point of view, his act of supreme folly. Inadequately briefed—in both senses of the phrase—he decided that he must pursue the investigation.

Once the viewing line was past the coffin, it lost all cohesion and focus. Some people headed straight out of the door, back toward the entrance foyer. Others in the line broke into little groups, chatting together in low voices. Waldo waited for one of the rare moments when everyone did not seem to be staring at him. Then instead of going toward the exit he went on, through an unmarked door that led deeper into the funeral home.

He at once found himself in what might be termed the business district. The walls were cement, the floor uncarpeted. Lights were unshaded and harsh, and no flowers were anywhere in sight. What Waldo did see were a number of metal tables, and a variety of most unpleasant-looking surgical implements. Needles and stout thread on one of the tables, plus elaborate make-up kits, did nothing to make him feel more comfortable.

He hurried on, to still another door. As he passed through it, he heard the door through which he had come in beginning to open. Heavy footsteps sounded at the entrance.

Waldo pushed the door shut behind him and stared around in panic. It was another room, severe, chilly, and dimly lit, with only a couple more doors and no cupboards or closets within which he might hide. The furnishings were just a half-dozen metal tables. Most of them bore suspicious-looking long lumpy objects, each covered with a white sheet.

The footsteps in the other room were louder. Waldo could hear voices. He shuddered, climbed onto the one

unoccupied table, and pulled a white sheet over himself. It was a little too short. He was able to cover his head, but then his bare feet remained uncovered.

The door was opening.

"Not here," said a gruff voice, just the sort of voice Waldo expected a ruthless murderer to have. "It's a bunch of stiffs."

"He must have come through here, though." That was the other man. "Nowhere else he could have gone. You head back and tell the boys what's happening. I'll keep going."

Heavy feet clumped, closer and closer. Waldo tried to stop his heart beating. If they pulled back the sheet, and got one look at his face . . .

Another door opened and closed. Before the echo died away, Waldo was off the table. They would be back, no doubt about it. Shivering, he scurried across to the only other door and hustled through.

At least this little room was *warm*, for a change. And there was more. All along one wall was a broad shelf, about three feet wide. On it stood a dozen blue boxes, each one labeled with the notation, HOLD FOR PICK-UP. Below that, each one bore a person's name.

Personal possessions, they had to be. Things that happened to be on a body when it was brought to the funeral home. Waldo moved along the line of boxes. Near the end he saw, to his excitement, the name that he was looking for: CARLO MOOLMAN.

The blue box held a miscellany of objects: articles of clothing, cleaned and pressed; shoes; watch, wallet, keys, checkbook, pens, coins, comb. And then, the jackpot: a small phial, no bigger than Waldo's thumb.

Waldo picked it up. Three-quarters filled with a pale green liquid. This was the serum, it had to be. All he had to do now was find a way of getting out of the funeral home in one piece, and delivering the phial to Imre Munsen.

Unfortunately, that could be a problem. The room he was in had only two doors. The one through which he had entered would not be safe to use. And the other one . . .

Waldo walked across, opened it, and recoiled. It led to the crematorium. A few feet beyond the sliding door lay the flames of hell. No wonder this room was pleasantly warm.

He gripped the phial tighter and ran back to the other door. And again he heard the sound of footsteps and voices. Many footsteps. Coming closer.

He was trapped. No matter how much he protested his innocence and insisted that he had just got lost inside the funeral home, they would not believe him. Not when he was carrying a phial of immortality serum.

Waldo came to a desperate decision. He uncapped the phial and raised it to his lips. It did not taste like an immortality serum—quite the reverse, as a matter of fact—but he gulped down every disgusting drop. Then he took the phial and tossed it into the consuming flames of the crematorium.

The fatal evidence was gone. Now it would be up to Imre Munsen and the United Space Federation to deter-

mine from an examination of Waldo just what the immortality serum contained. With luck, they would have a thousand years to do it.

The door was opening. Waldo crossed his arms and stood defiant, prepared if necessary to sell his life dearly.

The two hard-eyed uglies entered. "There he is!" one of them exclaimed. "I told you he had to be here. Come on in, chief, and take a look at him."

They stepped aside. Through the open door strode Imre Munsen. "Oh, he's all right," he said. And then, to Waldo, "Hello, Mr. Burnmeister. I didn't expect you'd be coming here, so the undercover boys didn't have your description."

"Moolman's k-k-killers!" The fluid that Waldo had drunk was puckering his mouth and throat, so that he could hardly talk.

"No sign of them, I'm afraid. And the funeral's over. I'm beginning to agree with you, the whole thing was a scam, just an attempt by Moolman to get money."

"No," Waldo pointed to his mouth, then to the crematorium. "The phial was here. I found it. I swallowed what was in it, and I threw the empty container in there."

"You found it? Where, for heaven's sake?"

"In the blue box there. With Carlo Moolman's personal effects."

"But we went through all those, as soon as he was killed. We didn't find a thing. Can you describe what you found?"

"Certainly." Waldo's stomach gave a premonitory rumble. "A little plastic tube, about this long. It was nearly full of green liquid. Tasted horrible."

"Oh, that," Imre Munsen gave a casual laugh. "Sorry, Mr. Burnmeister, but we already took a good look at that when we were going through his things. We put it back. It's certainly not an immortality serum."

"Then what is it?" A terrible thought struck Waldo. "Is it poison?"

"No, no. It's medication. You see, when Carlo Moolman arrived here on the Moon, he developed an upset stomach. Change of food, change of water, the usual thing, it gave him awful diarrhea. So he went to a doctor and got something for it. He took a dose every morning, and he had no more problem."

"A dose. How big is a dose?"

"Three drops a day of the green fluid. Four, for a really bad case. Mr. Burnmeister, are you feeling all right? You're looking a bit pale."

Well, all that was nine days ago. There has still been no sign of Carlo Moolman's immortality serum. The Luna City rumor mill has shifted to another Elvis sighting, and this morning Imre Munsen called to thank me and Waldo, and tell us that he is going to change the Carlo Moolman case description to simple murder.

The other good news is that Waldo's relatives have gone. The bad news is that Waldo himself has not, despite the employment of a whole arsenal of powerful purgatives.

He lives in hope. He says it could happen any day now. I am encouraging him to work at home. ♦

Sweet Are the Uses



David Galef

In Guizuelo, the sun beats down like thousands of tiny golden hammers, and the only relief in the town square is the café, where the waiters are serving cool glasses of lemonade. Look, here comes that scruffy artist you saw trudging the fields yesterday, his easel strapped to his back along with the few rags of clothing he owns. He sits down in one of the café chairs, but no sooner has he seated himself than I send one of the waiters, the burly one named Carlos, to chase him away. "Señor would like a drink, eh?" he says, giving the chair a shove. "You haven't got two centavos to scrape together, have you?"

"I was hoping," mutters the artist, "you'd be able to grant me some credit. I am parched, absolutely dry. In order to paint, I need—"

"You have paint and canvas, isn't that enough?" Carlos

Illustration by Guy Frechette

gives the chair a wicked twist. "So go paint. Leave the seats for paying customers!"

"For the love of God, just a glass of water."

The artist's face is a study in misery, and Carlos is about to relent—but this will never do. I push him, he pushes the chair, and the artist falls to the pavement, barely saving his easel. He leaves cursing the establishment, calling down a malediction on the dry, unrelenting town of Guisuelo. Of course, this is exactly how he should feel. Half an hour later, he sets up his easel at the outskirts of town and begins the picture that will be his masterpiece. In spare, flat strokes, he depicts the aridity he feels in the fields and in the red dusty roads. In blazing yellow, the sun glowers upon a peasant pinched and hobbling, with the sullen face of Carlos. He works with the determination born of exhaustion and within an hour has finished what will come to be known to art collectors as the first in the *Labriego* series.

That was in 1884. Lucky art world. Lucky artist. If I hadn't arranged for him to be denied a place at the café, he might never have painted that picture. Other times, I employ more permanent measures. For example, if Van Gogh hadn't had Ménière's Syndrome, a disorder of the inner ear, he would never have produced those dizzying effects, those vertigo-inducing impastos.

Are you still interested? Do you wish to track me down? I am all but invisible. Even my strongest efforts may not take effect for years. Observe:

A little girl in a scraggly brown pinafore crosses the rectory yard. "Father, I don't think the people of Haworth like us."

"Hush, now." The Reverend Patrick Brontë bends down to pat his eldest daughter, just seven years old. His wife has been dead for four years—not entirely my doing, but she would have lasted longer if I hadn't stepped in. The Reverend now finds it no easy task to bring up the four remaining children. "Here, go amuse yourself with your brother and sisters."

The child screws up her face. "But we have nothing to amuse ourselves *with*."

The child's father frowns back at her. "Well, then, you'll have to pretend. We can't just up and leave, you know."

So little Emily Brontë makes up the fantasy world of Gondal with her siblings. Unable to move from Yorkshire, they play too long in the damp air of the rectory graveyard and contract tuberculosis. I was overgenerous with my store of mycobacteria in those days, but what a salutary effect it had on literature! The wasting disease gives the Brontës' novels that famous Gothic, melancholy air. True, they die young—Emily at thirty, Charlotte at thirty-nine—but what they lose in life they gain in posterity.

Shall we go back further? I am older than you think. Picture thirteenth-century France, its streets alive with intrigue and the sensual spirit of the Renaissance—but not for everyone. I held off the consummation of Dante's love for Beatrice so that he would have a fit muse. Yet sometimes the opposite kind of good is required. Travel back over two thousand years to Mycenaean civilization:

the creak of wooden chariot wheels over the dust of the ancient plains. Here passions run high over seeming trifles. A contest over a golden apple led to Paris abducting Helen from Menelaus, which caused the ten-year siege of Troy, which gave Homer something to sing about. I also struck Homer blind to make his sound all the more poignant.

My influence over the arts is legendary. James Joyce had to endure a stifling life in Dublin and extreme poverty, which forced him into literary exile. Even his bad eyesight had use, as ocular metaphor in *Ulysses*. I killed Shakespeare's father and his son Hamlet so that he could properly compose *Hamlet*. I forced Dickens's father into debtor's prison. This led to young Charles toiling in a bottle factory so that his descriptions of the working poor would be authentic. I even burned down Ben Jonson's study so that he could write a poem about it. I pinch, I prod, I poke. I stir up creative juices by refusing to let the contents settle.

But my influence extends beyond the arts. Look at this wealthy politician with his violin-chin, delivering overblown speeches as he loses his campaign for the 1920 Vice Presidency. I delivered polio to Franklin Delano Roosevelt, I crippled him, to make him rise above adversity and become the leader who helped the United States through the Depression. Back in 1882, the year of Roosevelt's birth, I was in Tusculum, Alabama, ministering to a darling two-year-old. Scarlet fever was the greatest gift I could have given to Helen Keller—who would ever have heard of her otherwise? Some two decades earlier, I had a train conductor pull young Thomas Edison's ears so hard that he was deafened, the better to invent in uninterrupted silence. There isn't a field in the world where I haven't lent a helping hand, so to speak.

I am called by different names in different ages. St. Augustine (and how do you think he got to be a saint?) said, "Sweet are the uses of adversity." He ought to know: I gave him a guilt-inducing bag of a mother who made him flee to Carthage—read the *Confessions*. "In order to be found, you must first be lost": now there's a man who understands my methods.

Look, here is another scene: a man and his family are content to live on the hillside, doing nothing but tending their flocks. They live peaceably and without any grand ambitions. Now strike down his children; send a murrain upon his cattle. Hobble him with debt and disease, year after year. Recognize Job? That man acquired fame through me. He even has his own book in the Bible.

Some call me Providence, or Provvy for short. Some worship me; some call me unspeakable names and wish me out of existence. But I abide. It is they who perish. I extend from the beginning of time to the end of all imagination. My footprints are all over history. Nietzsche, who wrote in a freezing cold room with his greatest work wrapped around him, called me the Necessary Evil.

Of course, not everyone appreciates what I do. If I hadn't stunted Napoleon Bonaparte's growth, he would never have had such an inferiority complex, such a need to conquer others. These others have only a small role to play, I'm afraid. As in art, you may call them the audi-

ence—a captive audience. Yet no one was paying attention in 1877 when Alois Schickelgruber, an unsuccessful customs officer from Braunau, changed his name to shed his humble background. Twelve years later I made his infant son Adolf sallow and dumpy, just the type to yearn for a master race. I cramped his hands so that he would never be able to pursue his first love, art. Eventually I had him clapped in Landsberg prison, where he wrote a curious work called *Mein Kampf*. The rest is history, as people say for want of a better term.

Are you beginning to recognize me? No, don't run for the door. I am, after all, omnipresent. Also omniscient and omnipotent. Sit down again. That's better. In any event, the effect I have on you is indiscernible. A slight twinge in your knees, perhaps, leading you to stay indoors more and read. A humiliating sexual encounter,

making you a confirmed celibate who channels his drive into scaling the world's highest mountains. The loss of a job, forcing you to reexamine your life.

Believe me, accept me, take me into your heart. I work for the greater dream of mankind. Haven't you heard the approving description, "This artist has suffered for his art"? Or maybe religion is the path you wish to follow. Think how useful martyrdom can be. Even those scientific-minded space explorers know my credo: "*Ad astra per aspera*."

So heed me. Try not to struggle. This won't hurt a bit—or only at first, anyway. Not in the grand scheme of things.

Try to look at the big picture.

Try to stop shaking.

Trust me. ♦

About the Authors

Mark S. Geston will probably never be considered a prolific writer, but obviously that doesn't concern him. His family (three children) and his career (as a lawyer) have always come first—but when he does write something, it's almost always good enough to get published. His name showed up in bookstores last year on *Mirror to the Sky*, his first novel in 16 years, and now he's in the limelight again with "Falconer," his first appearance in this magazine and only his second published short story in the last 18 years. "I'm pleased to be back," says Mark, and we're equally pleased to have him.

"Fifteen-Love on the Dead Man's Chest" is the tenth published story in what **Charles Sheffield** calls his "sewage series"—not because this piece has anything to do with sewage, but because that was one of the things on a list of topics that his children drew up in the late 1970s. "The list had all sorts of funny and disgusting items," says Charles. Over the years he has tackled the topics one by one—this story started with the single word "morticians"—usually working in some other zany stuff along the way.

"Purists argue that this story makes tennis on the moon sound just like tennis on the Earth, which is implausible," notes Charles. "I reply by asking them if that is the only implausible feature of the story."

In a writing career that spans a little more than 15 years, **David Galef** has been published mostly in mainstream periodicals. But he got his start in the genre of science fiction, and was an assistant editor at *Galaxy* for a short time. Two years ago he returned to the genre with "Tour de France" in *FESP*, and now he's making his first appearance in this magazine with "Sweet Are the Uses," an unsettling short piece that concludes on the top of this page.

"New Time" is piece of work that **Phil Jennings** describes as an experiment for him—"an experiment in writing a story that isn't chock full of goshwow ideas, revealed at a breakneck pace. See 'Mad Maud's Dance' for the opposite." (That story appeared in our January 1993 issue.) Phil goes on to say, "I've given myself the freedom not to write the same stories all the time, set in the same universe. I'd be more of a commercial success if I did otherwise, but I wouldn't feel healthy about it."

John E. Stith has come back to his roots with his appearance here this month. It was in *Fantastic* and *Amazing* that his first two fiction sales were published, in 1979 and 1980. He's gone on to build a reputation as a novelist, and that reputation should be enhanced when *Mambatan Transfer* comes out as a Tor hardcover in May. "Going Up" is the

title of Chapter 1 of the book—not a short story in itself, but certainly an episode that gets the novel off to a slam-bang start.

By the time you see this magazine, **Danish McPherson** will have broken into the professional ranks with the publication of her story, "Roar at the Heart of the World," in the *Full Spectrum 4* anthology. "Folds of Blue Silk" is one of four other stories she has sold to genre publications. She says this story arose from her desire to investigate savant syndrome (resulting in one of the most unusual protagonists we've ever seen), combined with what she calls "the world's increasing reliance on complex computer software"—leading her to the conclusion that "the human brain, even a flawed one, still has advantages over a machine."

If "Thunder-Being," which concludes in this issue, has whetted your appetite, you have just a couple of months to wait for the publication of *High Steel*, the novel by **Jack Dann** and **Jack C. Haldeman II** from which this story has been excerpted and adapted. By all accounts, it should be a breakthrough book—it's already been highly praised by several writers who got an advance look at the manuscript, including (among others) Barry N. Malzberg, Poul Anderson, Ben Bova, and Roger Zelazny. ♦

New Time

Phillip C. Jennings

"Cigarette?" The chaplain spoke with his chair swiveled backwards to the room. He gazed out the window across the yard as if fascinated by the cracked red bricks of Block D.

"I don't smoke." Dan shot a glance around the austere office. The guest chair was the same make as the one in his cell. He moved toward it.

"Sit. Sit down." The chaplain's skull was pale leathery parchment. He was bald enough to pass for a skinhead, but for the liverish signs of age. He held a folder in his lap. "You're a two-time loser, is that right?"

The old man still hadn't turned around. "I did a year in Wisconsin," Dan answered. A desk squared the distance between them, a bulwark of massive metal.

"You sound discouraged. You know what happens to multiple offenders under these new laws."

"I was drunk. This time it was the vodka." Dan was the silent type. He found it hard to verbalize to the back of someone's head, even when his future depended on it. "The first time I was mad at the world. I needed to change my attitude. I was young."

The chaplain opened the folder and flipped a page. "Something about a cathedral? Don't



Illustration by Paul McCall

worry, I'm not Catholic. I'm what folks call a smoking Baptist."

Dan couldn't tell if he was joking. "We lived in a police-occupied slum, except the cops didn't fuss if we stuck it to each other. Every day I walked to work past a stone mansion behind St. Gregory's where the priests lived. *Poverty, chastity, obedience!*" They didn't have to worry. They had everything, food and cleaning ladies and security. Twice a day the place set me on boil. That was a long time ago."

"There's still heat in your voice. You don't think it was fair. You're a believer. Somewhere in your soul, you believe in justice."

"I'm different now," Dan insisted, denying the accusation.

"Contrite? Can I use that word?" It was a soft request, as if the chaplain was changing his tactics. Harsh, gentle, harsh again. He swung around and raised his voice. "Was there a chaplain in Wisconsin? I'll tell you about him. The state paid his salary and then he went in playing good-cop-bad-cop. He tried to separate himself from the institution. God versus Caesar."

The chaplain's eyes were red and baggy and sharply observant. Dan looked away. He didn't know the script, and he wanted badly to get out from under an impending sermon. It wasn't easy gunning for parole.

"I'm not like that," the chaplain continued. "For me, it's the contrition that's important, not where it's aimed. You're sorry to God, or to the state, or to the people at that bank. Oh, yes, I'm sure you *are* sorry. At a certain age, things get through to you."

"But that's not good enough," old baldie went on. "You forget, and start drinking. You forget, and start insisting that the world treat you fairly." The chaplain set Dan's open folder on his desk, and tapped it sharply to prove his point.

Dan couldn't make himself answer. Finally—"I'd like to think . . ."

"You get one more chance," the chaplain interrupted. "Does that scare you? Because I can teach you how to remember. It's a kind of therapy. They've had good luck with it in Austria."

"Drugs? Electric shock?"

"What if it looks like something out of a Frankenstein movie?" the chaplain asked. He rummaged in his shirt for a cigarette. "What if it involves wires, and a helmet? Suppose we strap you into a bed? But it's not what you think. We're not going to steal your personality, or mess with your frontal lobes, or muck up your hormones." He lit up and leaned back in his chair. "You'd be a volunteer. You could do it once and then opt out. It won't prejudice my parole testimony."

Yeah. You bet! Dan's cellmate was creepy, one of those soft-spoken hairtrigger types. He didn't want to go back if he could buy another ten minutes. "Maybe you could show me the setup."

It wasn't as bad as the chaplain described. The fine print was scarier—fine print always is. Nevertheless, at the end of those ten minutes Dan signed his name on three different sheets of paper.

1.

On the morning of his parole Dan Grover passed the bus stop in front of the gates, preferring a couple hours' walk to an indefinite wait. His trek put the prison's unsightly brick walls behind him. He cut through Meadows State Park, and reached what passed for suburbia in a town of sixty thousand.

He had his hundred dollars and the address of the local halfway house. He didn't hitchhike, and he didn't expect anyone to pick him up. No one did, not before he reached sidewalk country, and not afterward.

At the house he got a dorm bed and met a couple roommates. They passed him today's paper. The short Help Wanted column was doodled with circles. Times weren't good, but Dan's parole officer would expect him to make the rounds, at least two interviews a week.

Dan grimaced. If he *really* wanted a job he'd have to lie about his prison record. He knew some French from his Cajun mother, enough to put together an alias. He'd be Dan *Gruvier*, a Quebecois who wanted to get away from "the troubles," whatever they were. He added features to his persona as he lay in bed that night.

Next day he took his new self to Drive-Thru Dry Cleaning, and gave them the story. He was heartbroken, the wrong sex in a place where even the boss was a woman, but he pretended otherwise. Selma gave him the standard answer: "We'll call the end of next week."

Selma rang the house that Thursday. "Can you drive?" she asked hopefully. "Do you have a car?"

"Yeah," Dan lied.

"I'd thought to hire someone for batching and bagging, but we could do business with the institutions—old folks' homes and such—if we pick up and deliver. You interested in that?"

"Yeah. Sure." Dan tried to prove that his brain was awake. "Will I need anything beyond my normal driver's license?" In view of his past drinking Dan's license had been suspended, but the parole officer might give him a permit. Selma wouldn't ask to see anything. If she did, Dan planned on "forgetting" his wallet. How did the Corrections Department expect ex-cons to go straight unless they lied about their handicaps?

Selma gave him assurances and asked him to show up Monday morning. After the call Dan looked around the halfway house. How could he get a car? If life was a plot, these roommates were fellow conspirators. He asked. One of them rang a guy named Carl. "He works for a claims office. They got a totaled '83 Honda waiting for the junkman. The accident took out the driver's side headlights and fucked the alignment, but what the hell, I bargained him down to seventy-five. No papers. Cop stops you for bad lights, you better talk fast."

On Monday Dan endured Selma's comments about the Honda. He started the day with in-house work. Dorothy handled the front desk and greeted the customers. She was a decade past Dan's interests. Just to be fair, Dan was ten or fifteen years too old for Angie, a skinny girl with a vixen smile. Angie handled the chemicals and the presses, and was always glowing with sweat.

Dorothy mistrusted Dan. Angie took his side and taught him how to work the equipment. "You got a boyfriend?" he asked.

"Yeah." Her answer was unenthusiastic. *He isn't treating you right*, Dan thought, seeing how her snarl winked off. It came on again when he changed the subject.

Selma called him over. "Go to that convent on Ninth Avenue north of the post office. Park behind in the alley. There'll be someone waiting with a binload."

Dan almost made it. The cop in the cross lane stopped him for not signaling his left turn—and how was he supposed to do that? He asked to see Dan's license.

Dan's eyes opened. The chaplain frowned down as he lay strapped on the table. "Well, it could have been worse," he said. "You do give yourself liberties. You'll have to learn not to snare yourself in lies."

"You aren't going to vote down my parole?" Dan asked anxiously. He looked around as best he could under the confinement of his immobile helmet. The room was windowless, just this exam table, cupboard, sink, and the usual medical doodads bolted to the walls. The town he'd been in was memories, an imperfect place of false fronts and textures, but five minutes ago he'd bought it completely. Part of his brain had been turned off, the skeptical part that also failed him during his dreams. "I kept *mostly* clean," Dan insisted.

"You'll get cleaner. A few more treatments, and when the day finally comes you'll know how to live inside the rules."

2.

On the morning of his parole, Dan Grover walked past the bus stop. His *déjà vu* hike put the prison's red brick walls behind him, out of sight but never out of mind. No one picked him up this time either. He knew the route now: Witter Avenue and then the 12th Street bridge.

At the halfway house he got his former bed and met his former roommates, who didn't seem to know who he was. They passed him today's paper. It was a repeat of last time around, but he pretended interest anyhow.

Next morning he woke and read his notes to himself. *Remember there was a last time. Remember this is a dream.* Chaplain-reality was fading, a world of muddle and gray colors, but Dan decided it was paranoid to think that helmet could make him forget it when he didn't want to. No, he was a man of two lives, free to risk one of them. A man with a program. He called Selma at Drive-Thru Dry Cleaning. "My name is Dan Grover. I'd like to interview, but I have to tell you I'm on parole and my driver's license is suspended. I don't have a car."

It was quite a load to dump on the woman. She took time before responding. "Well, I really needed someone who could pick up and make deliveries."

"Yeah. I understand." Dan almost hung up, but it couldn't hurt much more to hear her say no.

"I guess I can't find a place for you. Maybe when the car situation sorts itself out."

"Yeah." Dan set down the phone. Later that day he

took a walk. Road men were working on Merrimack Boulevard. The cement truck read "Lakeland Durl-Mix." He came up and asked: "Is there work at Lakeland?"

"If you pass the physical." The driver turned to face him. "Got any back problems?"

"Nope. Never."

"Call the number. It's in the book. We got jobs to do in a hurry before the season closes."

Cement work was physical, and Dan wasn't as young as he'd been. A week went by and then some, before he muscled up to where he could think of anything but work and sleep. He needed a payday blast, a Friday night at O'Hara's Bar, but that option was ruled out. If he wanted to make *real* parole, he'd have to avoid booze, banks, and the Roman Catholic hierarchy.

He took a walk. Paxton Park was some trees rimming a duck pond. Downtown was two blocks further on. Drive-Thru Dry Cleaning was still open. Dan saw Dorothy and Angie inside. He kept going. On his way back they were closing up. When Angie went out to her car he called to her: "Hi! Remember me?"

Of course she didn't. "You'll think I'm crazy, but I know what you do all day, and you're the one who taught me." He went into details while she stood nervously, squinting into the setting sun. "I'd like to do something for you. You were kind to me. You want dinner at Perkins?"

"I—I don't remember . . ."

"Well, sure you don't," Dan said, agreeably crestfallen. "And then there's your boyfriend."

Angie looked suspicious. "Did Harris set you up? You know where he is?" Before Dan could show his confusion, she nodded. "Okay. Let's go."

The Perkins was half a block away. They slid into a booth. Dan pressed her: "Harris? That's his name?"

"God, I hope he stays scared. I hope he doesn't come back." Angie blurted these words and then looked scared herself. "You're not his buddy?"

"I'd just as soon he didn't exist. You weren't happy with him."

"We rented this place," she answered. The words started pouring out. "We'd get mail for the people who lived there before. Harris took it personally. It was offensive to him. He started tearing up their letters, and if they got junk mail offers, he'd sign for anything and forge their signatures. We'd get stuff—lots of CD's from Columbia Records, and it cheered him to think those other assholes would have to hassle the bills."

She shrugged weakly and fumbled with the menu. "I can't yell at men. I'm the type they walk over. I just had to watch. Finally the postal inspectors came knocking, because this signature he'd forged was the name of a three-year-old kid. That's when Harris skipped town. The inspectors asked questions and left and he took ten minutes to pack. He offered to marry me. He'd make the arrangements from Denver."

"Jesus. So you couldn't testify against him?" Dan didn't remember the penalties for postal fraud, but Harris's panic seemed excessive. He sounded like a scumbag—not just a cheat, but cowardly too. "You should find yourself a better class of men."

"You?"

Dan shook his head. "I'm trying. I work at Lakeland. I asked Selma for a job, but she needs someone who can drive and I don't have a license."

Angie looked at him like he was a freak. "How do you get around?"

"It's not convenient," Dan agreed. He mustered himself. "I used to be like Harris, but they caught me and put me away. The place I went to—you get worse or better. If you get worse, you're parked for good. I don't want to be a three-time loser. I'm taking the other option."

Dan hadn't known he could blush anymore. He spoke through his embarrassment. "You don't deserve a recycled punk, but there's nobody I can talk to. If it's okay I won't ask more than to keep us at that level. You're my little bright spot and I don't want you to vanish."

It was Angie's turn to blush. "You don't think you're coming on strong, but you are." She fussed at her uniform and gathered herself in a way that portended bad news. Just then the waitress came over.

She took their orders and left. That minute was all Angie needed to change her mind. "I'd like someone to talk to too," she said. She laughed. "Harris took the car. If we go places, they'll have to be around here."

"Fine," Dan smiled. The thing now was to "talk." He took inventory of the possible topics. "How's Selma to work for?"

Angie had no strong feelings. She asked Dan's opinion of whether she should go back to State College and get a degree. Perkins grew noisier with some argument and the two of them turned to watch. "*I'm ready right now, you chickenshit!*" a large young man taunted a businessman in a booth, a man in a suit and tie with two frightened children sitting opposite him. The younger man prodded his shoulder. "*Don't give me any crap about making a scene. I'll haunt you every place you go, and every time I come around.*"

"Hey!" Dan stood up. "Hey, he's got kids with him."

"Stay out of this. This is between me and Floyd," the bully answered.

"I doubt he's a willing partner," Dan said. "Don't mess with a guy when his kids are watching."

"Fuck it. Fuck you!" The young man took a swing. Dan gave him a rabbit punch in the belly.

He opened his eyes to the chaplain. "Oh, God. What'd I do? The fight? Man, I was on the right side!"

The chaplain nodded. "You've certainly improved." There was no rush to judgment in his features, or in the way he chewed his lip. "It's a hard call. After men grow up, they go decades between fights. That's the Dan Grover we want to release to the world. You've got justice on your side, but the statistics are against you. If I recommend you for parole, people will challenge me on this."

He paced. "Progress, though. Real progress. Okay, let's give it a shot."

"Should I have just let him hit me?" Dan persisted. "Should I have stayed in my booth?"

The chaplain held up his hand. "Let it go. You've got your future, and that's what we're here for."

3.

Someone twiddled a knob, and took Dan's discernment away. Or maybe he was getting used to the brighter colors of "dream-town," but freedom was always brighter than prison. If this was *real* parole, nonetheless it started like those other times, and that's what finally decided it. Besides, there were wall-to-wall gaps in his mind, thoughts Dan couldn't get traction to think. He yearned for it to be otherwise, but this had to be episode number three. Dan debated waiting for the bus, for the sake of variety.

Nah, he couldn't do that. As he walked he tried to hitch a ride. Nobody picked him up. Dan remembered when the world had been a nicer place, and shook his head. *Keep things straight. Two worlds, and this one wasn't necessarily a comment on the other.*

The halfway house was the same. Dan's spirits sank until he got a look at the paper. Was it because he'd complained the last time that the want ads were different? The residents in the halfway house were different too.

He found Drive-Thru Dry Cleaning in the phone book, and Lakeland Duri-Mix. By nine next morning he had as much of a job as a telephone could give him: "You need someone now that the city's widening Merrimack Boulevard, and Bill's in the hospital with that back injury."

"Yeah." The guy should have been impressed by all the stuff Dan knew. "Come on down and we'll check you out."

"Hank can give me a ride in the morning. I don't have a car. Is that okay?"

It was. If only Dan could zoom into Angie's heart as quickly, but when he called her apartment, a man answered. "Harris? You wouldn't know anything about some missing mail?" Dan hung up before the sleazo could answer. Her boyfriend hadn't skipped town yet. Angie would have to wait a week or two.

Dan went to work, and bided his time. So this was living by the rules! It felt like a game. There ought to be some way he could win—win everything without waking up inside prison again.

Somewhere a guy named Floyd would soon present him with a chance to play hero. If he did that right, and Floyd was rich . . .

Hank roused Dan out of this recurrent fantasy by offering a fifty-buck bet on the World Series one night during the drive home. "Detroit's gonna take it in five. Six at the most."

"Pittsburgh in four," Dan blurted, and went tense. Gambling was a non-Baptist activity, surely more so when he knew the outcome. He expected to wake out of this dream almost instantly, but the chaplain didn't pull the plug. Old baldie didn't even pull the plug when Hank reached to shake hands on the deal. What lesson was Dan supposed to learn from this?

Back at the house Dan made a long distance call to Las Vegas. He went through the paper's financial page. He could memorize a few stocks and numbers, and next time around . . .

He didn't want there to be a next time around. Anyhow this was too much data, column after column in

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IBM 286-color VGA display

tiny type, and a plus .1 for Uic might mean a lot more than 3.5 for Rbii. The smart way would be to pay a broker to tell him what stocks were climbing.

A town this size didn't have more than three or four brokers. One was named Floyd Bremerhaven. Nice, but Dan was moving too fast. Everything had to wait.

Dan slaved for his first paycheck all over again, and studied the paper. He memorized the news and asked the house director about local issues. After the first two World Series games, Dan began nosing out used cars. His parole officer decided to help him get his permit.

Pittsburgh won number three on the road, and then number four. How quickly did the folks in Nevada send out winnings? It was Friday; the day for Dan to encounter Angie and reprise everything, and begin to win her heart. The spontaneity was gone, but the caring wasn't. That's what counted, or so Dan hoped.

What was it about her? he wondered as he trailed her into Perkins. She was so young he almost couldn't call her a woman. Her body was more safe than sexy. Any man could dominate her physically, but men wouldn't fight over her. Was it that? Was it her vulnerable personality? Dan asked the hostess for another booth, one by the windows, but he needn't have bothered changing from last time. After Floyd walked in with his kids, no large young man came up to harass him.

Dan survived his earlier wipout and pushed into New Time. He studied Angie while she talked about her love of chemistry and how folks teased her about being a science nerd. What was she? A computer construct? Right down to the strands of limp hair, and the bony elbows, and the long, fidgety fingers? Was she a feature of Dan's dream, or a dreamer herself? He took her hand. "Let's go to a movie."

Their romance progressed. The Vegas check came next week. Angie helped Dan hunt for a car. They settled on an old Bronco II and celebrated with a night of Chinese food, hot kisses, and clumsy front-seat sex.

Dan survived this non-Baptist episode, dragged to work next morning, and woke up to feelings of pity and gratitude. Was this love, or a trickle of helmet-current into his brain? Could he ever know for sure? How could he make life better for the two of them? Dan had hardly any money left to play the stock market. He called Floyd anyhow—the road work on Merrimack was close, and he jogged to the halfway house during his lunch break. "How are you at humoring crazy people?" he asked breathlessly.

"Depends," Floyd answered over the phone. "As a rule I prefer sanity."

"Suppose I had a time machine and some money, and went back to a couple weeks ago—"

"You'd do better playing the horses," Floyd said. "'Time machine,' huh? I've heard other lines. Can you come out here? I'm in Colongard Tower on Second Avenue, out west past the new WalMart."

"I work all day," Dan pondered. "How about the downtown Perkins Pancake House? Around suppertime?"

"The things I do," Floyd complained. "Six o'clock. Look for an overweight Robin Williams in a maroon tie."

Dan spent the rest of the day mystified by Floyd's will-

ingness to do business. The guy breezed into Perkins without his kids. He shook Dan's hand and asked the waitress for "the usual." "So, let's start," he said to Dan. "Have you ever played *Leisure Suit Larry*?"

Dan shook his head.

"Computer games. That's a better metaphor than time machines," Floyd went on. "There's another game I like: *Civilization*. Just before the other guy's chariot attacks your phalanx, you save the game. If you lose, quit and restart. Eventually you get lucky. Keep it up for six thousand years and you're the most outrageously lucky player of all time. It's cheating, but who wouldn't cheat?"

Dan sipped his water, and nodded. "I like being lucky."

Floyd bent closer. "Okay. Two big problems. One, you can't save *this* game. You start at the beginning each time. Am I right?"

"Right."

"Second, you've got a coach who likes to play God. How do I know? I've been through this before. Folks like you call stockbrokers. It's an ego problem for me. I'm a computer-game figment, a piece of cardboard with an attitude, but I'm real to me, and I like making money." Floyd leaned back. "I bet you don't know how I do it."

"There's other people like me?" Dan asked.

"Why not? If this is all some fake reality, it's gotta be damned expensive. There's a bunch of supercomputers involved, and millions of staff-hours worth of programming. Nobody's going to run all that for one guy at a time." Floyd quirked his head. "Who's your coach?"

"The chaplain out at Meadows Prison," Dan said.

"You ever think of driving there to visit him?" Floyd asked. "He's the one guy you *know* who's exactly like you. He's in your simulation, and in reality too."

Dan grunted. It was a new idea and not one he wanted to pursue right now. "You're a runamok character in this game, aren't you?"

"I'm very nice to myself," Floyd answered. "I work for clients like you. Next time around you'll have the data I give you, and you'll come to me to make the investments. I'll get my commission on the deal, plus loan interest, plus I'll put my own money on the same stocks. Sure, it doesn't *help* this me, but if I'm Floyd number sixty-two, Floyd sixty-one did me the same favor. I'm already raking in my share."

"Maybe you're *not* a game character. Maybe you're something else." *You're the Devil*, Dan thought to himself. *You're a bug in the system. You're riding one of those infinite loops that programmers hate so much.*

Floyd shrugged. "Write these down, Nikeo Optics. McNurty-Williamson. Saber Communications. They're the best I can do for you." He looked around. "No guarantees, though. Sometimes a coach requests changes. They can twiddle the database."

Dan nodded. "Like the Help Wanted ads. Blame my chaplain, not you? Because if I blamed you, I'd be an enemy who'll come back time after time to make your life miserable."

"Jesus!" Floyd patted his forehead with his napkin and looked around. "When they change the outcomes, don't you think I get screwed too?"

Dan ventured a reassuring smile. "Suppose I've got a girlfriend. Do I spend a lot of effort loving a computer construct? Or is there some way I can tell if she's real?"

Floyd shrugged again. "Real people are loose cannons. They call stockbrokers and talk about time machines. They're after something in a desperate hurry, and they don't know what."

"She's not real, then," Dan grimaced. "Someday I'll make *genuine* parole and lose her forever." That thought triggered a cascade of speculations and indictments. The chaplain said Dan was taking some kind of Austrian-Frankenstein cure, but what if he ended up liking this simulation better than true freedom?

After supper Dan put a quarter in the Perkins pay phone and called the information number at the state prison. He got a recording and left a message. "Fuck it," he said to himself, and crossed the street to Comstock Liquors. He bought some vodka and coke, went back to the Bronco, and began mixing and sipping.

He woke up. "I want to talk to you," he told the chaplain. "What kind of world are you running here?"

"I want you to win," the chaplain said as he loomed over Dan's table. "That's what you don't understand. That's what most folks can't believe. The system doesn't lose when you win, not if you play by its rules. We're all better for your victories."

"But I shouldn't have been able to gamble on Pittsburgh like that," Dan couldn't bring himself to ask about Angie. She was private to him, except that couldn't be true.

The chaplain sighed. "You're playing the basic simulation at its easiest. Once you master this environment, we'll go to a harder setting. When you win under the most difficult parameters, you'll be set. You'll go out of this prison and conquer the world."

"How long will that take? How many fake paroles, over and over again?" Dan asked.

"You've got the time," the chaplain answered. "Five shots a week for three more months. You can spend your hours in your cell, or here."

Dan closed his eyes. Angie. Angie over and over again. Someday she'd be gone, an unreal collection of bits and bytes, but someday too he might be ready for that. He didn't have to worry about it now. The whole thing was bent, like masturbation compared to real sex, but damned if it didn't *feel* real, and he wanted more.

"I'm your man. I just couldn't get the rules straight. It was bugging me. I wish you had a user manual."

"Mine's the Bible. It works better the harder things get, but don't worry. You're doing fine," the chaplain said.

"I wanted to talk to you. That's why I broke out of the game. Can you put me back where I was?" Dan asked. "Do I have to start all over again?"

The chaplain nodded and looked at his watch. "Tomorrow."

4.

On Dan's next-day parole he hurried through a familiar landscape and made his ritual phone calls. He was

broke, but a cooperative Floyd Bremerhaven lent him money to put on Sabre Communications.

Would he make his killing? This Frankenstein dream-life was full of peripheral details, and Dan tried to enjoy them. Why worry if Pittsburgh would win the Series this time? Why worry about Angie? If she spurned him he'd just start over again, but in the meantime fall was coming into glory.

When the Lakeland crew told jokes, he memorized them to cheer up the losers at the halfway house. He watched some college kids play volleyball, and got invited into the game. He viewed a TV series about convicts setting Australia two hundred years ago. All this happened during Old Time, but by shifting his attention away from his goals he could make it seem new, and test the capacities of the town's supercomputer God.

Finally he reached New Time. He had a girlfriend, and a Bronco, and a couple thousand dollars in stock money. Was this victory or just the beginning? Dan was still at the bottom rung of the town's social ladder. He went to State College with Angie to help her register for classes, and pondered the possibilities of further education. Computer science? He signed for an evening course. The town had a barbershop choir, and he tried for baritone.

The chaplain woke him up. "We're going to change the parameters," he said. "We want to make it a little harder, but the rewards will be worth it. Congratulations. I'm going to be proud of you."

"Will the people be the same?" Dan asked anxiously.

"Worried about Angie?" The chaplain smiled. "We'll make her livelier, more unpredictable, but ninety-five percent the same."

Dan nerved himself. "I'm thinking that somewhere this town really exists. You guys and your computers—you took a snapshot for your database, but it has to exist or it couldn't seem like a real place. It's real, it's interconnected, and you can't make lots of radical changes because everything would fall apart."

"Hm. I see why you'd want to believe that. I guess you could say—Excuse me," the chaplain caught himself, like a scientist unwilling to bare the truth to the subject of his experiments. "I can't smoke in here. See you tomorrow."

108.

Dan had seventeen dollars in his pocket and an empty pint of vodka at his side when he gunned his brother-in-law's pickup into the Liberty National Bank's Magic Money machine eighteen months ago. On the morning of his parole the state was kind enough to give him money back, plus the two hundred he'd earned working in the prison laundry. The gates opened and Dan faced an asphalt road. It crossed a pair of train tracks. Some distance away lay a divided highway.

No bus stop, and no Meadows State Park. This was the real thing. Dan's own eyes controlled the slightly myopic focus. He could smell dirt, and pines, and diesel—he'd never been able to *smell* before. There was a town

all right, ten miles north of here, but the city was an hour's drive south.

Dan started walking. After a while someone picked him up and took him to the Welsh Lake freeway oasis. Then a trucker dropped him off where he could call his sister and ask her to fetch him home.

"They'd visited Dan once since his incarceration. When she drove up he renewed his apologies. "Sorry about the truck."

"Are we going to have to hide the booze?" Sis asked. She was fat, and her daughter too—their flesh trenched where the straps and belts of their too-tight clothes cut them. Dan liked them despite their grudges, but he could hardly believe they were the same sex as Angie. "Just wait and see," he promised. "Got any atlases at home? Something with city maps in it?"

"Nah." She looked at him oddly, and Dan remembered: he was the silent type. That's how his folks thought of him, and it would be all too easy to fall into those habits again.

Sis and her husband were gratified the next few days when Dan stayed sober, went through the want ads, and started calling for work. So was Dan's parole officer. Dan hiked ten blocks to Liberty National, introduced himself, and apologized about the Magic Money machine to the highest ranking veeep he could find, but they didn't offer him a job. No storybook endings in *this* reality.

Pittsburgh died in the playoffs and never went to the Series. Winter began early with a freak snowfall. Dan went door-to-door with his brother-in-law's shovel. He gave Sis his earnings to pay room and board, and spent evenings in the reference room of the local branch library, avoiding the speculative look in his teenage niece's eyes.

Dan found dream-town in a book of road maps: Pononiac, Nebraska had the same streets spanning the same river. He went to his parole officer to ask for some arrangement so he could move out of state, and discovered that she'd scrounged him a job as a groundskeeper-janitor for a rental condo. It was a forty-minute commute from where he lived, but there were two solutions to that problem. Dan opted for both of them. Again he got certified for a temporary driver's permit. A car would come in time, but meanwhile one of the condo units was his to live in while he repaired the last tenant's damage.

Dan called for the Pononiac phone book. It arrived three weeks later. Floyd was in it, and Angie, and Drive-Thru Dry Cleaning. Meadows State Park was *Natural Prairie* State Park, and there was no prison.

Logic. If this was reality and stockbroker Floyd was right about the economics of simulation-parole, there'd be ex-cons like himself, veterans of the same dream, lots of them hung up on Pononiac for one reason or another. The poor place would be deluged. Was that good, or bad? A horde of reformed men and women with programs and ambitions, scheming to succeed in a familiar setting, stage by stage and step by step. Think of the *pressure*! Poor sleepy Pononiac!

Dan had lots of questions. *Was this reality?* As best he

remembered these last months, every time he'd bought the idea that he'd made parole it was because the chaplain had upgraded the simulation, but how could *any* simulation have his sister in it? And not just one mid-dling town, but a city of three hundred thousand! No, Dan was being tricked into doubt. The obvious way to find out if this was the computer's best dream was to break the rules . . . at the risk of getting arrested. Uncertainty had always kept him straight before. Straight and sober. Life was not good to three-time losers.

It was the indecisiveness that got to him, selling him the premise that it would be wonderful to know for sure. Reality was his birthright. Dan worked through to spring and bought a used car he could barely afford to insure. The parole officer arranged an exchange with Nebraska so he could move there against her advice. She was a good woman, but as counsellor and client they were so far from a match that Dan doubted she ever had fancies about him. Nobody tempted his heart away from Angie—this young woman he'd never actually met!

Dan's drive cut through Iowa, hundreds of miles of rolling cornfields. How could a supercomputer contain this universe? He'd get to Pononiac and see all those familiar faces from his fake dreams. It was like trying to return to a womb that could no longer contain him.

What was the hurry? Dan parked at the first rest stop west of Omaha. He peed, and walked circles around the building. Okay, he said to himself. Okay, Okay. Suppose this reality *was* fake. He'd still be better off knowing. Floyd could tell him. Floyd the game-player. Floyd the winner, with no soul beyond the computer itself.

It was spring, and meadowlarks sang in the fields. *Better off knowing all this was fake?* Dan wondered how much heart would go out of him if he learned these last six months were encapsuled inside a prison room. Six months of joyless fall and winter, focused on a goal now just sixty miles away! How many times could he get used to ever more advanced levels of delusion? How many times could love draw him on, before he learned that nobody was worth that much obsession? He'd been jumping through hoops, and calling it freedom because he'd chosen the hoops for himself, but he'd be a slave until he stopped playing other people's games and invented his own.

Birds again. Red-wing blackbirds down past that slough. They had absolutely no role to play except as decor, if life had all these goals. You got no points for smelling the flowers. The rest-stop fence was a perfumery barrier. Dan clambered over it, and began to walk north into his shadow, his back to the sun, stampeding a few grasshoppers out of these wild weeds. North to nowhere. North off the supercomputer's map. Was it possible? He meant to keep on until he found out. Maybe he was tired of purposes. Maybe he was a failure.

Maybe he was free at last. The only answer that could come from outside himself was the wrong one, and he'd made his decision. He preferred this twittering silence. He kept walking. ♦

Going Up

From the author's forthcoming novel, "Manhattan Transfer"

John E. Stith

Manhattan never sleeps. It doesn't even blink. By three in the morning, it was as close to lethargy as it gets, but that was still busier than a nursery full of hyperactive kids with megadoses of sugar and caffeine.

As something quite out of the ordinary began, Manhattan lay awake in the dark.

Slightly past the orbit of Saturn, over forty degrees above the plane of the ecliptic, ionized particles of the solar wind encountered a disruption where none had existed before.

Space twisted. An artificial rotating singularity deformed the fabric of space, bending it in on itself until a black hole formed. Charged particles that would normally have sped directly through the region instead began to move in arcs, most of which ended at the singularity. They accelerated as their paths curved tighter toward the gravitational lens, speeding faster and faster as



Illustration by David Martin

they approached, and, during their final nanoseconds of existence outside the event horizon, spewing X-rays like tiny distress calls.

The event horizon bloomed to a diameter of several hundred kilometers before it stabilized. While the solar wind funneled into the region, an enormous black starship emerged from inside the event horizon. The starship, almost as black as the region of space it slid out of, absorbed radiation across the entire spectrum as it spun sedately. As the nearby singularity was switched off, the event horizon shrank until it vanished, and the only obstruction to the solar wind was the ship itself.

The huge squat disk-shaped ship sported octagonal rather than circular endplates. The disk was over 100 kilometers in diameter, as big as a small moon flattened into shape. The ship's spin slowed until it hung motionless in the dim starlight. The black ship then began to pivot into the solar wind. It kept adjusting its orientation until one octagonal surface pointed generally at the distant yellow G-type star. The precise alignment was at the small blue planet, third from the sun. Moments later, the enormous ship began to accelerate smoothly toward Earth.

The *ubup-ubup-ubup* from the chopper's blades rose in pitch and volume as the pilot pulled back on the collective, and the chopper rose a meter off the concrete at the edge of Manhattan. The six passengers were all secured, and the sounds in the pilot's headphones were positive, reassuring. He let the craft hover a moment on the ground-effect cushion as he readjusted his shoulder strap. As soon as he felt in control, he let the chopper continue its rise. Below him the circular markings of Manhattan's East 60th Street heliport began to shrink. As he rose, he let the chopper turn slowly, and he scanned the space over nearby building tops. When the chopper faced the East River and JFK International beyond, the pilot pushed on the cyclic stick and the chopper tilted slightly forward, still rising as the craft began to move toward the airport.

The pilot enjoyed the runs between Manhattan and JFK, particularly at times like now—the morning rush hour. This was one of the few jobs in flying where you could “drive” over the roads below in Queens. He took a lot of pleasure in passing slow-moving traffic on the Long Island Expressway, BQE, and Van Wyck, cruising right over the stalls and backed-up sections, ignoring pileups and emergency trucks.

He reached cruising height just before the East River. Below was the Queensboro Bridge, doing its best to jam more people into Manhattan.

A sudden shadow was the first indication of trouble. Reflexes took over and he lost a little altitude just in case. If the passengers complained, he couldn't tell, because the headphones and the rotor roar would block anything up to a scream.

The helicopter pilot had just convinced himself there was no problem when a faint pencil of red light cut the grimy sky vertically in front of the windshield bubble. He jammed the stick and tried to veer away, but he had no time. The whine of the rotors suddenly changed pitch as the rotor blades hit the shaft of laser light. The chopper

became a machine gun, firing severed pieces of rotor off to his left. In milliseconds, the slicing light had whittled every rotor down to half its original length, and then the chopper itself hit the beam. A hand saw moving at the speed of light, the laser sliced the chopper right down the middle. The engine overhead exploded as the casing surrounding the whirling components split into pieces.

Shrapnel from the exploding engine perforated the bodies of the pilot and passengers as the two halves of the chopper began their plunge to the East River. The pilot hadn't even had time to utter the one word traditionally heard as black-box recordings terminate.

Matt Sheehan had heard little more than the roar of the A-train subway since it sped away from the Jay Street station in Brooklyn and lurched under the East River. He'd taken a small detour through Brooklyn after landing at JFK and taking the subway through Queens.

As he stared out the window into the dark, he saw nothing except an occasional utility lamp as the car rocked on its rails. He was aware of snippets of conversation, but paid no attention. The morning rush hour crowd was so dense, Matt held his small flight bag in the same hand that gripped the overhead bar. The woman in front of him faced the door, pretending as he did that it was comfortable to be as close as lovers. The mass of bodies rocked with the motion of the car. Through the front of the car, Matt could see the lead car making small zigzag motions.

The woman suddenly turned and looked around angrily. She scanned nearby faces, returning to Matt's. Her eyes were green. Her skin looked tanned, but the smooth texture said her complexion came from parents rather than the sun. She said, “I really don't appreciate that.” Matt got a glimpse of even white teeth.

It took Matt a moment to realize someone in the crowd must have pinched or touched her in a way even more intimate than the close contact necessitated. He almost said, “You sound like my wife,” but instead he hunched up one shoulder and extricated his free arm from the mass of bodies. He held his hand palm out. “I didn't touch you,” he said calmly. “At least not anywhere except here.” His gaze flicked down to where her shoulder touched his chest.

The woman, whose hair was shiny black, held his gaze a moment before she said, “I'm sorry,” and started scanning other faces again.

Me too, he thought as the subway continued to jostle the riders, a giant hand rocking the crib too energetically. Matt felt tired. He hadn't slept well on the flight from Mexico City to JFK, and wished he had more energy for his stop in Manhattan.

He let his eyelids droop closed, then popped them open a second later, when the car lurched violently. The overhead light went out. In the same instant, a shower of sparks splattered from somewhere behind him, and the screaming and shouting started.

A rumbling series of loud explosions sounded, so many of them separated by so little time that the noise was more a high-speed *rat-a-tat-tat* than distinct booms. Matt felt

his body pushed forward into the woman ahead of him as emergency brakes decelerated the car, and he felt a sudden breeze behind him. The floor of the car lurched again, and by the time the car jerked to a stop, the floor seemed to tilt toward the rear.

As the screams and shouts finally gave way to angry and panicked loud questions like "What the hell's going on?" directed to no one in particular, the car jerked several times and came to a halt in blackness. A woman's voice split the dark, yelling, "Get your goddamn hand off me!"

The echoes from behind him had changed texture and lengthened, as if they no longer came from an enclosed car. People began spreading out, and suddenly a man cried, "Hey! . . ." His voice trailed off until an impact forced more air out of his lungs. A few matches and cigarette lighters pierced the darkness. At first all they revealed were the forward half of the car and a confused throng of people. And Matt drew in a breath as he realized what *didn't* show—the rear half of the car. He pushed his way toward the back as more cries came from that direction: "Oh, my God." "Harry, Harry! What happened?"

As he got closer, Matt realized that the back half of the car was gone. He swallowed hard. People cowered at the sides of the vehicle, hanging on tightly and looking into the blackness behind the car. A man who apparently was the one who had just fallen got to his feet on the floor of the tunnel and looked up in surprise. Matt reached the severed edge of the car, and the temperature from packed bodies dropped noticeably. He took a deep breath and tried to control his fear.

The subway car had been sheared in half. The metal edges of the floor, walls, and ceiling still glowed a dull red from the heat of whatever had done this. Matt had once seen the edges of a hole created by an armor-piercing missile smashing through a tank wall. That hole reminded him of these edges, but here were no curling can-opener edges, just the shaved nubs, looking like plastic cut with a very hot knife, a hardware-store 3-D model of how walls were made. On the floor of the car and on the clothing of a couple of people apparently in shock were splatters of what could only be blood. In the air were musty smells of machine oil, ozone—and fear.

In the tunnel behind the car, Matt could at first see only faint reflections from the rails. He took a tiny pinpoint from his bag. With help from the light, he jumped to the track bed, careful to stay clear of the extra rail on the outside, even though the power was almost certainly off. A couple of meters from the severed edge of the car he found a man lying on the tracks, moaning. Careful not to make body contact, Matt grabbed a hunk of fabric and pulled until the man's leg no longer touched the rail. His heart pounded, but finally it began to slow as the initial adrenaline rush faded.

The man's right hand was gone, cut cleanly at the wrist. He heard gasps from behind him. The wound seemed to be partially cauterized already, but blood oozed and pulsed into the cinders. Matt took the man's belt, looped it a few times around the bare wrist, and fastened it tightly enough to bar further blood loss. Qui-

etly, in what he hoped was a reassuring tone, he said to the injured man, who probably couldn't hear him anyway, "Okay, fellow, I'm here. We're going to get medical help for you. You'll be fine."

Matt played his pinpoint over the nearby ground, but he saw no sign of the man's missing hand. Behind him a couple of people jumped to the cinder track bed. He called toward them, "A man here needs medical attention, if there's a doctor around."

He moved farther down the tracks. The next couple of meters could have been the aftermath of combat. There would be no helping the people here. What was left of a man had been cleaved vertically just to the right of his head. The rest could only be described as large and mostly recognizable pieces of human bodies.

Matt had seen casualties this horrible before, but he had always known *why*. Here he was totally confused. Was this the result of some terrible accident? Earthquake? The work of terrorists? Nothing made any sense. Somewhere behind him a nervous laugh got out of control and turned to a repetitive wail before it ended with the sound of a slap.

He walked past the remains and stopped. Instead of the rear half of the severed car, or even empty rails extending under the river, here was nothing. The rails themselves were severed, butting up flat against a dark wall that completely blocked the tunnel mouth. As Matt came closer, he could feel the heat radiating from the dull black surface harring the way. Water pooled on the tunnel floor. *Where the hell is the rear half of the train?*

As he played his light on the mottled surface, voices behind him said, "What the hell is that?" and "Mother of God."

Matt glanced behind him and saw an array of tiny flames piercing the black. A man in a business suit stumbled forward. "Agatha. Agatha! Can you hear me?"

Matt walked back to the man, passing a couple of onlookers with lighter flames flickering. "I'm sorry, but unless Agatha is in the car you just came from, she probably can't hear you. Come on. We've got to get out of here fast. We're probably still under the river, and something's cut the tunnel. We could be flooded at any time."

The suited man shook, his gaze directed toward the blocked end of the tunnel. The man who had lost his hand still lay on the ground, surrounded by three people who looked at him with horrified expressions, but weren't helping. Matt moved closer.

"Help me carry him out," he said to the onlookers. He forced his voice to be calm despite his urge to run. "It's risky to move him because he might have a concussion or broken bones from the fall, but he's got to get medical attention, and it's going to be a while before any help gets down here."

"What happened?" asked one of the three, a woman with dazed eyes.

"I don't have any idea at all. Maybe a bridge above us collapsed. I hope we'll find out when we get above ground." He hoped the prospect of finding out more when they got moving would appeal to them, but he didn't give the bridge theory any real credence. This was something worse. How much worse, he had no idea.

"Take off your coat so we can use it as a litter," Matt said quickly to the taller man, who wore a raincoat. The man didn't respond.

"Come on," Matt grabbed the man's arm.

The man took the coat off as though in a trance. Matt laid out the coat next to the injured man.

"Come on," he said as he knelt beside the man. "Help me move him."

Like obedient automatons, the three each gripped a shoulder or a leg and helped shift the injured man onto the coat. Matt took the edge of the coat next to the man's damaged arm so he could make sure nothing bumped against it. Together the four of them lifted the man to waist height and started up the tunnel. "If anyone gets tired, say so *before* you lose your grip. We're taking a big enough risk already."

As they reached the severed car, Matt stopped to retrieve his bag, and he found some passengers were still inside the car. "Something is blocking the tunnel back there. Everyone who can walk had better get started. No help is going to be here anytime soon from the way things look. Walk forward to the next stop. Anyone who's in good enough shape to run should do it and call nine-one-one. And stay away from the extra rail. Move fast, but stay calm."

Someone in the dark said, "My buddy says you can call for help from phones on the tunnel walls."

"If you see one, try it. Otherwise just keep going. But help anyone who needs it. Who can pass the word to the people in the lead car?" As soon as he heard a voice say, "I can," he and the others moved forward with the victim. Seconds later Matt realized that a blinking minivid "active" light was tracking them as they walked. Whoever it was even had a pinhead lamp shedding dim light on the tunnel walls. Irritated that someone was photographing them, he said, "Take your home movies somewhere else, why don't you? We need to get out of here."

A feminine voice sounded from behind the light. "This is for WNBC. What's your name, please?"

The voice seemed familiar. As a man with a lighter moved closer to the person with the minivid, Matt saw that it was the black-haired woman whose shoulder had bumped against his chest since the last stop. Matt made no reply.

They maneuvered past the walkway beside the severed car and past the lead car. Matt made sure no one was left aboard as they passed. Flickering light illuminated a scattering of possessions left behind. A headphone lay near a dark spill of blood on a bench. Someone must be in one shoe, because a lone sneaker with its laces still tied rested in a corner. An expensive video player had been left behind, along with a few coin-sized disks that by now would have footprints on them. A half-eaten sandwich wrapped in a deli bag lay flattened on the dirty floor. As they passed the lead car, Matt understood why the motorman had been no help. He was dead, smashed against the glass by the sudden stop.

Matt and the others were able to walk without jarring the injured man too badly, and they began to head up the moderate slope as quickly as they could without risk-

ing further injury to the victim. Steam rose slowly from a grate somewhere ahead. A couple of other people stayed close to them, holding cigarette lighters and matches in turns so the group could see a little of their surroundings. The woman carrying one corner of the raincoat got a couple of offers to have someone else take her place, but she turned them down. Ahead of them, the other passengers seemed to be taking it all in stride. Matt supposed living in New York required people to be adaptable.

Matt kept walking, trying to jostle his passenger as little as possible, as he wondered what they would find when they got out of the tunnel.

Rudy Sanchez got a second cup of coffee from the machine in the hall and took it back to his office. The hall was dark. No one else was in yet, and Rudy liked to savor the feeling of being in before the rest of the offices began to fill. He got twice as much done when the building was calm and quiet as he did when office hours began. Beating the morning rush enhanced the feeling.

He glanced out the window at the cars coming across the Brooklyn Bridge and sat down, ready to get back to planning the replacement for the old generator on the upper east side. He'd been thinking about how to start the next phase when he realized something about the sound of the city had changed. He went back to the window.

At first everything seemed normal. Traffic was a little slow, but that was hardly surprising. As Rudy watched, his eyes widened as a black shape of some kind came out from behind the Chase Manhattan Bank tower. What the hell? It seemed to be some kind of craft, paralleling the coastline, and as it moved, it directed a dim red pencil of light through the dirty air, toward the ground. Where the pencil touched land or water, destruction followed.

In awe Rudy put down his coffee cup and stared. What the hell was going on? He put his face nearer the glass and looked to both sides. Another identical black ship was moving along the coast farther to the north.

Both black, windowless craft flew an even course as they started what had to be high-power lasers toward the Manhattan shoreline. Rudy looked at the nearer craft. From just aft of the laser's origin, a gun muzzle threw a stream of pellets so fast and so frequently, there seemed to be a brown shaft of light behind the laser.

A deep rumbling sound reached Rudy, quaking the floor under his feet and vibrating the windows. He had the impression of thousands of small explosions occurring in the slit opened up by the lasers.

As Rudy moved to turn on the radio on his desk, the lights went out.

Abby Tersa had left Grand Central Terminal and was on her way to the United Nations General Assembly Building when the traffic lights went off. Normally she enjoyed the six-block walk, but today she stood on the sidewalk in front of the Chrysler Building and backed against the wall as the crowd roared and the car honking intensified, as if to fill the gap caused by the sudden absence of subway sounds and the hubbub from freight elevators and exhaust fans.

Abby hadn't seen a power failure since she'd moved to the Bronx three years earlier. It made her nervous.

She edged along the base of the building, feeling the urge to get to work quickly, but knowing that without power for microphones, amplifiers, recorders, and lights, she wouldn't be needed for much translating. She was wondering if the power would return anytime soon when she saw the black craft move from behind the tall slab of the U.N. Secretariat Building. The craft aimed its laser down toward where the East River met the Manhattan shore.

Fighting down the panic, Abby began sprinting toward the U.N. Fifteen years ago she had been in training for the Olympics. In a timed run during physical education in junior high, she'd been surprised to learn that she was the fastest runner in her class. Encouraged by her parents, who saw running as a good thing to balance out all the hours that she spent in her room studying, she had gone out for the track team. At first she had rationalized the activity partly because it was one more way she could exercise her foreign language skills, but she grew to enjoy the running itself, finding that when she hit her stride she could block all her worries. This time she found herself unable to block the image of that strange ship.

Arsenio Hecher pulled into the right lane fast, finding a spot that wasn't directly behind a delivery truck. His fare, a white couple with a kid, didn't complain. Out-of-town-ers were quieter than the natives.

Arsenio kept watch in the cab's rear-view mirror as the vehicle moved onto the Brooklyn Bridge, heading northwest into lower Manhattan. The traffic was moving fast for rush hour, but it was never fast enough. Sometimes Arsenio thought about finding someplace less congested so he could really *move*, but when it came right down to it, he liked the way New York itself *moved*. Anyplace else would seem like a sleepy country afternoon, and he could never go back to that.

Faint sunlight hit gray waves cresting in the East River. Arsenio honked a reply to a fellow yellow as the other cab edged past him. Why was the *other* lane always faster?

The cab had just emerged from the shade of the large bridge support near the Manhattan shore when a moving shadow flashed over the roofs of cars and trucks ahead. Someone must have been on a hell of a low path to La Guardia. Arsenio craned his neck to see what kind of plane it was.

The woman in the back seat asked, "Does this sort of thing happen a lot here?"

He didn't know what she was talking about until he looked forward again. A field of red taillights glared at him and horns began to honk even faster. As he watched, a sparkling red light flashed across a truck ahead of the car in front of him.

Arsenio slammed on the brakes as the truck exploded. The car behind him smashed into his rear bumper, and the man in the back seat yelled, "What the hell!" as in the rear-view mirror Arsenio saw a truck plow into the guy behind him. The kid began to cry.

From the corner of his eye, Arsenio saw steam explode

from the water at the edge of the river, as though a long thin heater lay just below the surface. As the cab finally showed signs of stopping successfully, the road surface began to tilt forward. The bridge was coming apart! "Crash!"

The goddamn bridge was turning into a drawbridge, but backwards. The section Arsenio's cab was on tilted down. As his panic rose, and he jammed his foot on the brakes hard enough to force the antilock on, he could see cars on the other side of the break burning rubber as they tried to gun it up the slope. Electric motors whined, climbing to the top end of the scale as the wheels spun, and cars slid backward, smoke rising from their tires. His heart raced even faster than the time he'd been mugged.

For an instant, Arsenio thought the cab was stopped precariously on the slope, but the bridge lurched again, and the car behind him hit his bumper one last time.

The cab slid off the end of the broken bridge. The screams from the back seat blended into one loud roar.

Arsenio cursed uncontrollably, his hands locked on the steering wheel and his foot still pistoned into the brake pedal for the entire time it took before the cab smashed into the water.

From his darkened office, Rudy Sanchez looked out at the destruction along the Manhattan shore. The Brooklyn Bridge had been severed, two trucks sliced in the process, and cars had spilled like toys into the river. Boats docked along the piers had been cut in two as steam rolled into the morning air. Rudy stood in shock, the dead telephone still gripped in one hand.

He had been tempted to run to help someone, anyone, but now he just stood, temporarily locked by indecision and fear. It seemed to him that anything he did now would be bailing a tidal wave with a teaspoon. A couple of fires had started where natural gas lines ran under the East River to Brooklyn, but cutoff mechanisms that didn't depend on power would limit the amount of gas available to burn.

The black craft closest to him switched off the red light, undoubtedly some unbelievably high-power laser. The craft rose swiftly with no vapor trail until Rudy lost sight of it.

The city sounded sick. The occasional rumble of a passing subway hadn't been audible for several minutes. The increased frantic honking from cabs and trucks gridlocked without working traffic lights more than made up for the lack in volume, but provided no comfort.

A flicker of black caught Rudy's eye. The craft was returning. He leaned forward and could see two more of them flying in formation but spreading the pattern as they fell. And what they were doing was even stranger than before. There seemed to be some filmy transparent material stretched between the craft. They looked as if they held some enormous soap bubble. *What in God's name is happening?*

The nearest black craft settled slowly toward the shoreline, stretching its corner of the bubble as it fell. Moments later the craft hovered over a severed dock. The corner of the soap bubble widened, and the edge of the bubble

began to pull itself down toward the shoreline, apparently sealing itself to the ground or to some material the ship had deposited in the groove it had cut earlier. Within minutes, the filmy bubble had settled into a smooth seal for as far as Rudy could see. It seemed big enough to be covering the entire island of Manhattan.

The black craft rose, moving away from Manhattan as it did. Another one entered Rudy's field of view. Seconds later they both stopped, and stayed where they were, hovering.

Rudy had no warning. In one moment the ships just hovered. In the next moment a giant flashbulb went off. Rudy could see nothing but sparkles surrounding a large red spot for the next minute, but slowly his vision returned. When it did, he could see the bubble was still in place, but now it seemed more tangible. It was still transparent, but the reflections seemed brighter and they no longer wavered.

The hovering craft were gone. As Rudy tried to see where they might be, an enormous shadow crept over lower Manhattan.

Julie Kravine took a last few shots with her minivid, then shut off the sand-grain light. The image of the stalled subway cars faded from her retinae, and she turned to follow the stragglers up the tunnel.

Ahead of her were the four people carrying the man who had lost his hand. Julie cringed just thinking about it again. And she remembered the severed bodies they were leaving behind. She had taken shots of them, too, more so that people would believe her report than because they'd be used on the news. She hadn't felt this ambivalent since she left Tom.

Julie felt uneasy. The ground rumbled with some unidentifiable tremble, and things just felt wrong. If the tunnel collapse was some localized catastrophe, she'd be hearing the rumble from other subways as they traveled nearby. Instead, the only vibration was that constant far-away tremor.

The rumble stopped. Suddenly the underground felt completely quiet, unnatural. Something was definitely very wrong. Julie hurried ahead, following the flickering lights. She stumbled, then got back to her feet and started picking cinders out of her palms. The tunnel smelled oily.

She caught up with the foursome. A couple of men walked with them, holding cigarette lighters, obviously ready to take over for anyone who got tired. She turned on her tiny light and minivid, capturing ten seconds before turning them off. She felt pride in how well New Yorkers were responding to the trouble. Her sister in Columbus complained about the crime rate and the apparent unfriendliness, but when things got tough, New Yorkers found ways to cope.

Julie moved to catch up again. She was tired from covering a late-night hostage crisis in South Brooklyn, but the good part was that it had left her with all her recording gear and a moderate battery charge at just the right time.

She caught up with the others and turned on her minivid, set to voice-only to save the charge. The tall

man who had been next to her in the subway when it all started gripped one corner of the raincoat holding the injured man. He was the same one who had calmed the crowd with sensible directions and a take-charge attitude that didn't smack of dictatorship. And he was the same one who had declined comment earlier. Was he a cop?

The man was going to be the focus of this piece, whether he liked it or not, Julie decided. She moved deliberately to one of the other three people carrying the injured man.

"I'm Julie Kravine with WNBC," she said to the woman who carried one corner of the raincoat. "What's your name?"

"Bette Waylon." The woman wore a dark jacket with the bracelet cuffs made popular in *Way Down and Way Over*.

"Can you tell me what you thought when the lights went out?"

"Nothin', I guess. That I'd be late for business."

"Any ideas about what might have caused this?"

"Now. But we can find out on TV when we get back up."

"Anyone else here with a theory?" Julie watched the tall man. He opened his mouth but didn't say anything. Julie moved around until she was next to the tall man. He glanced at her, then looked ahead.

"And your name is, sir?"

The man replied without looking at her. "Matt Sheehan."

As she formulated her next question, Matt added, "And I apologize for being rude back there. I thought you were just another idiot with a camera. I guess I was a little edgy."

"I think we're all a little edgy," Julie said, thinking that he seemed the least edgy of anyone down here.

"You a cop?"

"A cop? No."

"You seemed to adapt pretty quickly to the situation. What's your background?"

"I've spent some time in the service."

"Ah. So, do you have any theories about what happened back there?"

The man was silent for a moment and several pairs of feet crunched gravel on the dark tunnel floor. "Not really."

"Nothing at all?"

"No. Just that I'm betting the problem isn't just down here."

"What makes you say that?"

"Just because this section of tunnel goes under the river. It's got to be going through bedrock. Anything generating enough force to do damage like what's back there isn't going to be confined to one tunnel."

Julie had been so intent on getting pictures and reactions that she hadn't thought much about anything else, but a sudden lurch in her stomach told her the man was probably right. An instant later she wasn't so sure the reaction had been nerves.

The ground shook. People carrying the injured man stumbled as they passed through a plume of rising steam.

Julie crouched in the dark tunnel, feeling the same sensation she felt in an elevator as it accelerated upward.

In the Columbia University computer science department building, Dr. Bobby Joe Brewster awoke with a start.

For an instant, he felt he was at sea. The desk his head rested on didn't seem solid, and neither did the chair he sat in. He jerked his head upright.

"Piss!" Bobby Joe looked at the dark computer screen in front of him. The atmospheric simulation run had been almost complete when he must have finally fallen asleep. And now he'd have to start over. The power had gone off, and it had stayed off long enough for his uninterrupted power supply to use up its charge.

The floor lurched, and a stylus on Bobby Joe's desk rolled a few centimeters and stopped. "What—"

Either the students in his computer modeling class were playing one hell of a trick on him, or something was really screwy. He rose and moved to the window.

Yup, something was really screwy, Bobby Joe decided.

He rubbed the sleep out of his eyes, took another look over nearby building tops and watched New Jersey sink. "All right, you guys," he said loudly. "It's a convincing display."

He listened for laughter or some other response. Nothing. He looked out the window again, first as far to the left as he could see, and then as far to the right. He'd spent enough time in Virtual simulations to know what was real and what wasn't. This was real. But it was unreal.

Traffic had come to a complete standstill on every road he could see. In the distance a huge mall vaguely resembled an aircraft carrier from this high up. Boats left their trails in scummy water. Slowly moving out into the Hudson was a line of turbulence.

He looked up as best he could with his cheek flattened against the glass. Overhead was a solid black cloud. Or was it? The edge looked awfully straight.

Bobby Joe looked back at New Jersey. He could see roads he'd never seen before, and the shoreline was beginning to disappear from view as it fell below nearby rooftops.

Fear forced him into nervous humor. This was not going to be a good day.

Annie Muntz was eating breakfast and watching the morning news in Queens when the lights flickered and the TV picture froze on the last frame. Motion out the window caught her eye.

On the table next to the couch was a thick tumbler with an inch of Scotch in it. She rose and moved closer to the window for a better look, taking her drink.

At first, Annie thought somehow her apartment building was sinking into the ground, because the Manhattan skyline was slowly but undeniably rising into the air. And the skyline was under a huge transparent arc, as if all the buildings had been put under a giant cake cover.

As she watched, her knees felt weak. The entire bubble-covered island of Manhattan was slowly rising into the air. As it continued to rise, she saw what was underneath the island. Below street level was a huge cone that extended deeper than the Empire State Building was tall.

A dozen dark lines led from points all around the is-

land up into the air. Annie's gaze followed the cables and saw an enormous black ship even bigger than the captured borough, hovering above it. A puzzled expression wrinkled her forehead. The alcohol level in her blood was high enough that for a long moment she considered the possibility that she was witnessing the advertising stunt to end them all.

Finally Annie yelled to her husband in the next room, "Hey, Herb! Come here. You really should see this."

The rear half of the A-train subway had sustained far more damage than the front half. The rear half had crashed into something very hard.

Groans filled her ears as Shirley Hamilburg regained consciousness. Her first thought was that she'd had a super-realistic dream about going to work, and then she worried that she'd overslept. Finally she opened her eyes and managed to convince herself she really was awake despite the fact that she couldn't see. Where was Frankie, and what was wrong with her eyes?

Light flickered somewhere to her left. She turned her head to see where it was coming from, and she finally realized that she really had been on a subway car. So where was she now? The light flickered again. It was someone with a cigarette lighter or a match. Suddenly she realized how hot she was. The air was stifling. She was still in the car.

Shirley lifted her head, feeling the pull of pain from her shoulder as she shifted position. Lights flickered from somewhere outside of the car. She was in a mass of bodies like some nightmarish orgy.

Shirley tried to extricate herself from them. When a nearer flame lit the darkness, she saw that the man ahead of her must have hit the handrail support pole very hard. From near the front of the car came the sound of someone throwing up, and Shirley winced. She'd almost rather be dead than be throwing up.

Shirley finally managed to free herself. She moved over a few stiff bodies by supporting most of her weight from the overhead bar. The door had already been forced open. Outside, to the right, near the front of the train, lights flickered. She edged between the car and the side of the tunnel. The car itself was obviously not sitting evenly on the rails, and it leaned toward the opposite side of the tunnel. She passed the end of the car and walked beside the car ahead, which had jackedknifed.

Shirley caught up with a small group of people holding flickering matches and lighters.

By the wavering light she could see that the first car in line had somehow been cut off as though God possessed a giant meat cleaver. The crumpled half-car rested against a solid obstruction blocking the entire tunnel. Two lifeless faces gaped and stared unseeing through the blood-smeared window.

Shirley stared at the blocked end of the subway tunnel. A man beside her said, "I don't understand. What's going on?"

Shirley shrugged. She had no answers.

A sudden rumbling and creaking began. Someone in the small crowd said, "It's moving!"

Sure enough, the black barrier at the end of the tunnel was sliding upward. And outward. Light filtered into the tunnel, and Shirley squinted as her eyes adjusted.

The gap between the tunnel mouth and the upward-moving plate widened. The gap kept on widening. Instead of revealing the other side of the tunnel, though, a chasm opened just past the mouth of the tunnel. Someone in the group murmured, "Holy crap."

The others in the crowd seemed as speechless as Shirley was until the bottom of the moving shape reached eye level. More and more light filtered down until daylight finally reached the bottom of what was an immense cavity like a strip mine. And above the void, an incredibly large dark shape floated higher and higher.

Water began to spill past the tunnel mouth, but not before Shirley had gotten a view of gaping tunnel mouths on the sides of the elongated chasm. The pair of holes more or less in line with the direction the severed subway tunnel pointed had to be the Holland Tunnel, and just to the right was a PATH rail line tube. To the north were another pair of severed tunnels that would be the Amtrak rail lines. God almighty.

Even farther north was a trio of tubes, the Lincoln Tunnel. Grimy black smoke poured from the rightmost circle. Water began to slosh past the other tunnel mouths as Shirley's mind finally began to come to terms with what was fairly obvious but very difficult to accept: all of Manhattan was rising into the air, leaving a huge long hole in the ground in the same shape as the island.

The waterfall grew louder and louder, but for the moment, the water was moving past the tunnel mouth fast enough that little water entered. By that time, the entire perimeter of the lip looked like Niagara Falls.

A man in a sweater and a vest said slowly, "Oh, God. Do you realize what will happen when the water fills the hole and reaches this height?"

Suddenly Shirley knew exactly what would happen. At about the same time someone else said, "We'd better schlepp our butts out of here!"

A kid in a black jacket said, "We'll never get all the way back before the water runs down the tunnel and reaches us. We'd be better off jumping in." By now the falling water made a thunderous noise.

"Yeah, sure," said the man in the sweater. "Be my guest. Go ahead and jump. It's like a goddamn blender out there. And if we wait for the water to reach here, we'll just get caught and sucked back down here as the water drains into the tunnel."

"Well, we gotta do *something*," the kid said.

"Right. I'm running." The man ran back into the dim tunnel. Most of the others followed, and Shirley went, too.

They ran through the nightmare blackness until Shirley's lungs threatened to explode. They hadn't even managed to reach the lowest section of the tunnel before the water began flooding in. The *whooshing* made her heart race even faster. Wind started rushing out of the tunnel, and two cigarette lighters went out. Cold water swept

past Shirley's ankles, and seconds later she was sloshing through calf-deep water.

The water suddenly seemed to move faster, and it swept Shirley off her feet. The current carried her in total darkness. Her feet dragged against one wall. Her body tumbled in the turbulent current. She couldn't tell which way was up, but she had to breathe.

Shirley had held her breath as long as she possibly could by the time the current smashed her head against a maintenance panel.

Rudy Sanchez stood transfixed at the window as the Municipal Building creaked around him as though in a high wind. Some enormous ship above the city was obviously lifting the entire bubbled island into the air. A disturbance spread into the water in the Upper Bay as though a drain had opened in a giant bathtub. The Staten Island ferry had been moving toward Manhattan, but by now it had turned 180 degrees and was trying desperately and in vain to move south before it was dragged backward into the depression. Rudy could see a mass of people at the back rail of the ferry as the crest of turbulent water began to shake the ferry apart. Rudy had to shut his eyes.

When he opened his eyes again, Rudy could no longer see the ferry, but as he craned his head and looked southwest he was just in time to see the Statue of Liberty disappear below the horizon, looking for all the world as if she were waving good-bye.

In less than a minute Brooklyn dropped from sight, and within minutes Rudy could no longer see the Atlantic Ocean. The atmosphere slowly shifted from blue toward black. The image of the Statue of Liberty still burned in his memory.

Rudy glanced at people on the ground. Hardly anyone was moving, and almost everyone seemed to be staring at the dome.

The sky outside the dome now looked almost black. Rudy could see stars around the edges of the huge black shape overhead, and on the ground shadows seemed sharper than normal. The sun was brighter than he'd ever seen it.

As Rudy watched, the dark shape overhead suddenly grew wider, blotting out more and more stars until the only stars Rudy could see were almost level with him, visible through the side of the dome. His stomach twisted as he decided the ship towing the city hadn't come closer, but instead they were now underneath a ship that dwarfed the one that had picked up Manhattan. Rudy swallowed hard.

The black shape started to blot out more and more stars, as though a huge black cylinder was being lowered around the island. Rudy watched helplessly as they were pulled upward into the giant ship.

The light from the sun was cut off, and Manhattan moved into darkness. ♦

Folds of Blue Silk

Danith McPherson

This guy's chatting at me like an ancient Western. Red and black in the bar's moody lighting instead of colorized. Sophistication painted over frontier attitude. My fingerprints push shadows across the table so I won't look for the robot server. Won't glance toward the bartender. Won't betray myself to the suit. Somewhere. Who watches.

Ridges of swirls and whorls scrape against the table's mirrored plastic. I ride the last taste of a silk wave. Near the end of an unregistered sequence of artificial days and nights in a world that has neither naturally. Fear that I will



Illustration by Jon Wernan

revert to the pattern and not take the risk. Fear that I will risk and again fail.

"It has no corners!" The cowboy laughs, fashionably amused at his own punch line.

Silk pulls sound through me. Mingles it with the internal rhythm of the band's pounding music over the ear-vice. Slow-motion means from the organic contortion on the wallscreen, hootlegged satellite sex from Earth. Intertwined conversations and real-time movement from the room, street, spinning station.

Blonde hair curves around my face like a hood, ending even with my chin. Cowboy tells me I'm beautiful. Does he woo me with truth or a lie? At least I was born with a normal appearance. Spared the surgically perfect face and body the court would have ordered as part of my rights. Can't have our idiot genius looking mentally retarded, you know, someone might decide it was wrong to use her for high-level work.

"Amanda," he says, a name I use more than others. He finds my inattentiveness chic. He thinks I look away and smile because he attracts me. The tips of my fingers, nails chewed to bleeding, travel through faint residue on the polished table. The absence of numbers puts the curve to my lips.

Numbers: curse of being a genius. Numbers and symbols for numbers. They grow in my head like vines, mental kudzu. Choking all other thoughts. Only silk flutters them away.

Naked pornography blinks to an overdressed newscaster prepared to display a different set of distortions. Without slowing, the rhythm of the bar turns to the screen. All things from Earth are viewed with the same reverence. And skepticism.

"An unnamed source at the recently created Department of Space Exploration and Management reports that problems with the agency's new fluid computer have delayed the planned launch of the *Pilgrim*. A speaker for the department denies the report, saying that although problems do exist with the Ultra6, a back-up system is functioning as planned and the project is on schedule."

The natives listen while pretending not to. Most of Luna I-I is part of a chain reaction involving the spaceship. The only truly inattentive are the tourists. Cowboy.

"A poll conducted by our own network personnel shows that if the launch is delayed, public opinion will most likely turn against the staffed flight beyond our solar system. A successful launch is necessary to justify the department's formation and substantial budget."

A hum vibrates across my nerves, expected yet startling as a fulfilled wish. The robot server slides into my peripheral vision. I've practiced the art of seeing without looking, find it useful. The server delivers tall glasses. Red and black dance across the silvered curves. The names of the drinks we ordered print themselves on the machine's display along with the meaningless numbers of the tabs. I battle the urge to look into my glass. Momentarily win. I offer to pay and cowboy is pleased.

I crush carefully folded bills into my palm. Feel the small lump wrapped in paper. Sound retreats until I grow deaf. Silk is the only courage I have. The only constant I

value. A piece of blue tablet resides in the bills. Exorcist of demon numbers. My fingerprints seal the packet, thick so I'm sure the bartender is being sufficiently overpaid. I slip it into the slot on the server's belly.

The server glides to the next table. A chunk of blue freedom gone. Exchanged for a future. Numbers rattle outside my head like ghosts. I will not turn. I will not look at the bartender behind his acrylic barrier. If I do, my face will twist with pleading. And the suit will know. And the suit will stop me.

But if I hold still, just hold still and believe that the bartender can be trusted to take the fragment of blue silk and store it in whatever secret place he has. Can be trusted to feed it back to me, coated enough so it won't dissolve until after my tolerance level for the lovely blue has dropped. As he has before, unsuccessfully. As I hope he has now, successfully. Just hold still and let the moment pass from silence—

Cowboy nudges my drink, trying to gently force a slug of alcohol through me, thinking inebriation will ignite into lust for his designer body.

Now I look. Now when it will not seem strange. Black liquid erupts with swirling red beads. And one bead. Trusted to the rest. Surfaces and dives with the constant motion. The bartender is a saint. A god of salvation. I clink my glass to cowboy's. Savor the metallic ring as the large bead slides down my throat.

Music and voices rush through me. Relief spills from my mouth in laughter. "I'm a genius," I tell cowboy. Like Amanda, it's my own designation for myself. Not theirs. No. They believe me incapable of creative thought.

I lean close. "Which one is wearing the suit?" I sip my drink to expand his hope. Cowboy looks at me stupidly. I can't deal with stupid when I'm on silk.

"It's a game," I explain. "Ignore the clothes everyone is wearing." He likes that idea. "See them act, move, sit. Which one is really wearing a suit?" I keep my eyes on him while he watches the black and red dance hustlers, the black and red bar hustlers, the black and red drink hustlers. "That one." He nods toward a feather-capped dancer flying with the song, crest bobbing at the band suspended in its plastic cage.

Cowboy doesn't understand. Isn't interested in the game. Only in exploring my body. He's pretty the way an agate becomes smooth from much grooming. I want that prettiness while the silk still rolls in my blood, embracing me in blue folds.

He knows I'm won but he ignores it to prolong anticipation. To keep the night hot with crackling auras of close flesh.

He says rehearsed lines, adding inflected nuance, fabrication of depth. I respond, automatically spontaneous. He reaches the end of his flat wit and is in danger of falling off the edge. So we leave, stumbling along the tunnel through false gravity in the direction of his rented bed.

Away from the bar's halo-lighting our clothing rejects color and returns to white. Pale in the uneven pattern of glowing and perpetually broken lights.

A red and black hustler, the one who is really wear-

ing a suit, steps through the portal after us. Turns colorless. Follows.

Unnatural lab light forces a squint. Sharp edged. Disturbing in its reluctance to form shadows. The fresh taste of silk is sweet on my tongue. At least Wickman didn't wake me in that terrible place he refers to as my room. He does that when he wants to annoy me. Everything contained in that rectangle is offensive. Overly padded furniture with flouncy coverings, grating primary colors, photographs of people I've never touched dangling from padded walls, frilly drapes framing a hole of a window that does not open. The illusion of a place for living, spotlighted by industrial fluorescence like the lab. No shadows. Flat. Without perspective.

I have no connection to that room. Not while silk rolls in smooth waves, billowing gossamer. And not while it doesn't.

The dull ache at my temples tells me the silk has been gone a long time. It moves sluggishly in my veins. "How long?"

Dr. Wickman's angular face flickers with a professional smile that is supposed to be warm, friendly. There must be someone else in the room. "Not long," he lies.

I force a meaningless random number into my head while I still can. "Eight days," I prod him so he'll choose a response close to the truth. Something went wrong. My mind aches and can't tell me.

"Little more than five," Another lie. "You know what five means, don't you?" he taunts. He propels an electronic pen across the sensitive surface of a personal notebook and does not look at me. I am too normal now to be of interest. He forgets to pretend for the other person.

"That's illegal." It was probably—a number forms, a silk wave rolls through my blood, the symbol vanishes unrecognized. Probably—more. More than what Wick says.

"You signed a consent form."

"That's a lie," I say because I want it to be a lie.

He grabs a sheet of smoke-thin pennapaper, waves it in my face, lets it fall to my lap, a wounded butterfly.

The undersigned does hereby consent—

At the bottom is a thumbprint. Beside it, written in a precise scrawl, is the name my highly educated parents gave me before they turned me over to an institution that later sold me to the feds for a research grant.

"I'll contest it in court." I wasn't supposed to have signed this time. But I can't remember how I was going to stop myself, my other self, from doing whatever Wick instructed.

Wick smiles. Predator smile. He picks my bones to feed his insatiable craving. Eyes so calm there is no life behind them. Only dull hunger for the work.

Laws direct my existence. Enslave me and protect me with the same words. As incomprehensible as symbols, I'm incapable of using them to help myself. I can call up a lawyer's i.d. on the registry. I think I have. Sometime before. But while I'm on silk, symbols slide away without entering my mind, leaving my fingers without direction before the meaningless panel of the commnet.

I rub my temples and blink away the ache. A squat,

heard man steps close, watches as if I were a rat that just ran a maze at the speed of light. Another doctor. "I hope you're a lawyer," I say, not allowing him to remain a detached observer.

"This is Dr. Delancy," Wickman says.

Delancy does nothing to acknowledge the introduction. This is not our first meeting, then. I chill, knowing what he saw. Before.

"Extraordinary," Delancy says. "I haven't worked with an autistic savant before. I wouldn't have believed it if—" "If you hadn't seen the freak yourself," I finish for him. "This isn't an exhibition, Wickman. I'm not on display for your friends."

"Dr. Delancy has been directing you," Wick retrieves the untouched consent form from my lap. "He's coordinating the current phase of the project."

My stomach churns. How can this plump, soft man tolerate the near comatose thing that recites numbers? I cover my face against the stinging light. My hair falls forward, forming a globe.

Wickman taps my head until I look up. He hands me a familiar shiny box. I open the lid to be sure. Blue, curved waves that keep the silk rolling crowd together in the silver lining.

I snap it shut and press it into my palm.

"You didn't count the pills, of course," Wick says, "but you recognized that I've given you the usual amount. I must inform you that apparently you've developed an increased tolerance for the neural suppressant. It's rare, but there are a few documented cases."

Rare—that's me.

"You returned hours earlier than usual," Wick says, "and you were in a significantly advanced condition."

"I'm not coming back." I smear my fingerprints across the silver box.

Wick ignores my declaration. "You were asleep on the tunnel floor at the lab entrance. Your fingernail scratches are in the lettering on the door."

Is he being cruel by lying or by telling the truth? I don't look at my ragged nails. Pink skin torn, stained with dried blood. "The suit screwed up, then, can't even keep track of a retard in an orbiting station. You'd better hire a new one."

Wickman sighs. I have skewered a tender spot. "You have a right to know," he says.

"You're so careful with my rights. You and the suit." Invasion of privacy. Not allowed. Wick torments me with the rules he chooses to follow and the ones he ignores. In accordance with my rights, he shows me vids of my other self during "project sessions"—staring at nothing, responding with mechanical precision, gnawing at my fingernails, signing consent forms I do not comprehend. And in that horrid room with the padded walls, watching vids of old movies—the only memories I carry with me from my other self to this self.

He expects me to be grateful for the visions. Grateful for my periodic right to talk. My reward when he can no longer withhold it, when the "legal" consent forms that prolong the work sessions expire and he must grant it to me.

Wick is conscientious in his reminding me of all the disgusting details. So I'll understand, he says, about the blue pills, about having them and not having them, about the brain's tolerance level, about the cycle of so many days on and so many days off. About why I can't be on silk all the time.

Scratches in the door. Slashes through the stenciled letters. Truth or lie. How can I tell?

Delancy folds his arms across a wide chest that bulges his lab coat. "A circle has a radius of two centimeters. What is the area of the circle?"

"Wickman, get him away from me."

Wick doesn't budge, but at least Delancy is quiet.

"Your favorite band is playing at that bar you like to go to." Wickman is showing off for the new doctor. Tapping at my joints to demonstrate my reflexes.

The bar. Something went wrong. The bartender misjudged the amount of coating needed on the silk. I've no numbers to give him guidance. It attached itself to the wall of my stomach, then dissolved too soon. Again. And my body rejected it. "That part of my life is off limits to you," I say. "You have no right to intrude."

"Of course."

Silk doesn't affect normal brains. There's no black market, so the bartender has no reason to substitute something else and sell the silk.

And I believe I pay him very well to follow the instructions I slip into the robot server's slot along with the bills and chunks of blue.

Apparently I'm rich, but how can I tell? I only know that my account is never empty. The law prescribes that I be compensated according to my ability. What's a genius worth in the job market? I've read my own press. No one else—no other idiot savant—can do lightning calculations of complex equations as I can. A computer is only as good as its software. I'm hardwired from birth against error.

And a computer can't affect its own existence. I can.

When the bartender finally gets the amount of coating perfected, how long before Wick realizes I've cut a trap door through the side of the maze?

His confidence in the watchful suit will slow him down. His belief in his right to exploit me will keep him blind—

No. I don't lie to myself. At the first rebellion he'll know I'm no longer a passive rat. Then I must be more careful.

I'll still be imprisoned by silk and my body's tolerance level, by the cycle of on and off. Still enslaved. But with in the parameters of slavery, I will wrest what control I can. I will take what there is to have.

I can't simply save a blue and hide it on my person. Once the effects begin to slip, once the waves begin to calm, I revert to that other self. Time compresses and the future is lost. I swallow my last grams without thought. I've never gotten as far as worrying about how to smuggle silk into the complex, about finding a place to hide it in that monstrosity of a room until the immunity expires.

I can't hide it from my other self. I can't stop that person from sabotaging my own escape.

So I watched the movement of illegal commodities through the bar along with the other hustling. Watched without seeming to watch. And the bartender was the hub. I worked out a plan and made contact through the robot server. Right under the scrutiny of the suit.

Silk flows smoother now, and the initial disorientation eases. I ache to escape, but my legs feel wobbly, unable to support me.

Delancy is not the only new item in the room. There is also a board, the kind that can be written on and then erased.

The soft-white surface holds rigid lines of numbers and the symbols for numbers. Numbers and symbols. Numbers are symbols, and combinations of numbers and symbols mean other numbers, other symbols.

When I'm not on silk, the number-symbols push everything else from my mind until I'm no more real than they are, no more than a black scrawl in a formula.

Only silk rescues me, gives me breath. Makes me real again—as long as silk rolls.

"A markerboard. Is your new toy broken, Wick?" I know it's true, but I'm uncertain where the revelation came from. "Is that why you needed me for"—the number forms but escapes without my recognizing it, without my knowing what it symbolizes—for so many days?"

Wick's frown digs a deep channel between his heavy eyebrows. Delancy's round eyes are wide with surprise, as if the rat had recited Shakespeare. "She understands—"

Wickman cuts him off with a waving hand. "It is only the temporary effect of the drug." But the movement is too frantic for Wick. He suddenly sees me as dangerous to his precious top-secret project. Silk gives me power. Would the media be interested in knowing that the leading computer scientist in the world—and beyond—has to have calculations done by hand because his computer is broken?

Delancy gazes at me with the soft puppy eyes of pity. "Then we should get her consent for the next phase now, while she can comprehend its importance."

"Already planning another extended session that breaks the law, Wick?" The thought shivers through the silk. I would not be aware while it was happening, would not remember afterward. But it would keep me in their maze longer and away from the blue folds.

Wick speaks calmly, an expert in the legalities of my condition. "She's under the influence of a drug. Anything she signs now would be ruled illegal."

Delancy protests, "But without the drug she doesn't realize—"

Wickman swivels a dead stare to Delancy. "Doctor, this patient has been under my care and guidance for nine years, since she became eighteen and a court of law ruled it legal for the government to employ her for her specialty. She is an adult. According to the federal Bailboa Act, no matter what her intelligence quotient or mental disability, she can enter into any contractual agreement she chooses. And according to federal law, a contractual agreement is illegal if one of the parties is under the influence of a nonmedicinal substance. The

neural suppressant is still experimental and therefore not recognized as of medical benefit."

"The first part floats too far from my grasp, but I understand the rest. Wick is calling me stupid."

"A court would rule differently if it saw . . ." I let it fade, unable to speak of my other self in front of Wick.

"Perhaps. But there has been no test case involving the use of the neural suppressant on an autistic patient to set a legal precedent." Wick puts a hand on my shoulder. I cringe, but he clamps his fingers tight. "You could be the first. Of course, you would have to pass a drug test before filing your case. It's unlikely you'd be able to do both at the same time."

"Government logic," I say.

"Isn't the right to experimental products and procedures that might improve your condition worth a little incongruity? The government even supplies the neural suppressant."

"I earn my way."

"Yes, you're one of the few"—he pauses a beat. Delancy doesn't notice. I do—"capable of contributing to the society that provides for your needs."

He means I'm one of the *few of my kind*. Prodigious savant. Rare of the rare. How disappointed the scientific community must have been when it discovered me. Ladies and gentlemen, we have good news and bad news. The good news—we have found a human brain capable of performing mathematical calculations better than our best computer. The bad news—that's the only thing this brain can do.

"I'm not coming back," I say.

"That's your right, of course."

Wick doesn't believe me. Do I say this every time?

I walk out of the lab on uncertain legs. Sound comes to me. Makes me transparent. The buzz of the harsh lights crackles through me. In the long gray tunnel that connects the government research section to the rest of the orbiting complex I don't look at the door. I don't want to know if there are fingernail scratches through the stenciled letters.

The ache in my head is enormous. I hold very still to avoid vomiting. Perspiration slides from my upper lip into my mouth in salty drops. I keep my eyelids clenched tight against the blast of fluorescent light. Only a negative image, like the halo effect in a bar I know, registers. A round face, puppy eyes, bow mouth pushed into a frown by pouchy cheeks.

The nausea eases as silk drapes over me. Lightly I touch a wrist. Clammy, but real skin. Not the rubbery falseness of surgical adhesive holding flaps of tissue together like the last time I came to the silk feeling this bad. Wickman was very angry with me for trying to kill myself. I was angrier with myself for failing. He kept me from silk for a long time after that. My body horribly rejected it when the blue wave finally rolled through my blood. Coaxing. Coaxing until I relaxed into its folds.

Beneath the ridges on my fingertip I trace the thin line of the old scar. The memory of failure keeps me from trying again. So far.

"Are you all right?" says the negative image on my eyelids.

"How long?" My body tells me it has been very long. "Fifteen days."

The truth, although I don't comprehend it. Delancy, then. A sip of clear water touches my lips and I drink, relishing the aftertaste of sweet silk that lingers from a previous swallow.

"Don't baby her, Dr. Delancy. She's not a child." Wick's voice.

I sigh down to my soul. Another chunk of blue, encased in red and swallowed with a Lunar Blast, wasted. Another piece of freedom lost. The casing, thicker than before, still dissolved too quickly, releasing silk before my tolerance level fell.

"I'm not coming back," I whisper through silk. "I'm not coming back."

I lunge from the room as soon as my legs can support me and stagger through the internal design of boxes and hallways to the stenciled door. The gray tunnel provides only one way to go, but I'm grateful for that. Behind me I hear Delancy's squeaky shoes and labored breathing as he tries to catch up.

I wait for him before the juncture to the main tunnel. Somewhere in the confusion of shops and bars and too many people in too small a space the suit watches for me to turn that corner. I prefer the suit not see the lab-coated doctor flapping after me.

Delancy puffs and grabs his chest. He is slightly taller than I am. His puppy-pity eyes look down at me. "I'm not sure you'll understand any of this, but you should know—" The pity is really for himself. For being in this position. For having to behave in a way that is ethically correct so he can salvage his view of himself as human.

"I'm not an idiot. Not at the moment." I would never say that in front of Wickman.

Delancy gasps in a breath. He doesn't appreciate my humor. "The new computer—"

"The Ultra," I say impatiently. He *does* think of me as an idiot, but at least a human idiot.

"Ultra4. Yes. It works fine for a while, and then it comes up with answers that mostly make sense but that are a little off. It's hard to determine which parts are wrong."

"And Wickman is having me do the same calculations so he can find out when the computer's answers are correct and when they're not." Did he think I was completely unaware of what I'd been doing most of my life? "That's my job. Wick always uses me to verify new equipment and new software."

Delancy looks at the floor and shakes his head. "He's abandoned the computer entirely. He's using us—you—to work through all the equations for the *Pilgrim*'s flight. Our—your—calculations are being programmed into the computer on the ship."

"I don't care if he recites them to monkeys," I say. "Now, there's a bar waiting for me."

He grabs my arm, stops me from turning away. "That ship must not be sent into space. The safety of the people on board depends on the Ultra4 and a reliable link

between it and the *Pilgrim's* computer. Sometimes the fluid computer completely refuses to acknowledge the *Pilgrim*. What if that happens during the flight? I've tried to explain it to the agency, but Wickman tells them I'm exaggerating. They listen to him, not to me."

"So you want the genius retard to tell them?" I laugh. Hysteria, honed by the loss of the red-coated silk, scrapes along the molded walls. I shudder as a blue wave pulls the sound back through me.

"No. No." He releases me. "You have a gift."

"Would you want it?"

"There's no person who can take your place, and the Ultra4 is just as specialized a computer. Even dividing the tasks among a dozen of the military's high-powered machines can't duplicate the Ultra, when it functions correctly. The company is building another, but it won't be ready until after all launch windows are closed."

"So you'll help me run away."

Delancy nods. "I'll get you enough NS so you don't have to come back."

"Not ever?" His naive ethics are maddening. He's going to rescue me and save the world. I relish the marvelous impossibility of it. "What about in between? Will you take care of me while my tolerance level is too high for the . . . the NS to be effective?"

Delancy hits the lower lip of his little bow mouth. He hasn't thought this through. But I have.

He says against the curved plastic, deflated, too tired to lie to either of us. During the past days of my captivity in the lab he wrote the maze of complicated equations on the markerboard, placed my other self at the entrance, encouraged me along the route to reach the cheese. For every unregistered day I worked during the last long session, so did he. He's earned the exhaustion. "We must prevent the work from being completed, leave the equations unsolved. Wickman cannot be allowed to play with people's lives."

Is Delancy's concern exclusively for the crew of the *Pilgrim*, or does it include me?

"I'll figure out a way," Delancy says. "Dr. Wickman told me about that bar you go to. I'll meet you there. Tonight."

"Don't come too late." Poor Delancy. Enlisting me as his only ally. "I expect to line up some other entertainment for later on." I laugh at the sober way he accepts that. He doesn't have a clue what I mean.

"You will call me Amanda," I tell Delancy as he sits beside me. I push a throat-scorching drink at him and sip my Blast.

The round doctor squirms against cushioned plastic. The red and black lighting reacts violently to his patterned jacket, which delights the other patrons, ghostly white beneath the projected colors. A few of the males scowl. I had great fun reserving the chair for Delancy. The rejected males are disappointed by the doctor's pudginess, having convinced themselves that only Adonis could succeed where they had failed. They will recover quickly.

"Thank you for meeting me," Delancy darts a nervous

glance at the mixed crowd of laborers and tourists. At the crash-and-bum band thrashing in its acrylic cage, and almost chokes. At the naked bodies on the wall-screen, and almost faints. This is not his element.

"I've worked something out," he says. "The first opportunity to launch the ship has already passed." His exhausted condition has increased since our conversation in the tunnel. He moves in quick twitches, jacked up on adrenaline and intrigue.

"The primary window." Anyone, even an idiot, who lives on an orbiting launch pad knows the jargon. Before hitting the bar I viewed all the news reports since my last time out, working from a marker I set because I can't go by date. Plus an account of the asteroid dispute that went on longer than the dispute itself, a novel about a young woman who is self-destructive because her father died when she was a child, and a collection of tolerable contemporary sonnets.

Delancy recognizes my knowledge with a nod. "If the secondary window is missed, the launch will be postponed indefinitely. The agency will conduct an inquiry. The severity of the problem will be discovered, and Dr. Wickman will be reprimanded for actions that would have endangered the crew of the *Pilgrim*."

He grips the glass like salvation and leans close against the noise. "You can make Wickman miss the time line. You can slow his progress by not consenting to any more extended work sessions."

Simple. He thinks saying it makes it possible. I wish he would use my name. I wish he would look at me and see Amanda. "Now, Delancy, you must learn to pay more attention to what goes on around you. Without the"—almost call it silk, but that's my private title for it—"neural suppressant, I'll sign anything. And with it I can't legally protest."

"At the end of your tolerance cycle I'll slip you a dose of NS. Then, when Dr. Wickman puts the consent form in front of you, you refuse to sign. All you have to do is pretend that you're still . . . well . . ." He blushes red and black. "You know what I mean."

Silk, as soon as my body can accept it. Guaranteed. No guessing how thick to make the red coating. No ache because time on the blue waves was stolen from me. The work slows down and I get silk on schedule.

I sip my Blast, swallowing the gritty red rocks. There's nothing extra hidden in them. It would be too soon. I simply drink Blasts all the time so the suit won't get suspicious. "And when we're successful, when the launch is cancelled, you'll continue to provide me with the NS."

Delancy's eyes get very round. His mouth oscillates between open and closed. Fish suddenly on sand, starving for oxygen despite the air around it. He wants to tell the truth. But the rat must believe in the reward at the end of the maze, or it won't bother. "Yes," he says. "Of course." He smiles with his lips, but the lie never reaches his puppy eyes. "I'll be ready at the end of your next tolerance cycle. I'm sure I can get a dose by then."

Behind the plastic barrier, streaked red and black, a thin young man in transparent briefs and a starburst slashed tank top throws his voice and body into a song

Around him musicians pound out the accompaniment. "I'm not going back," I sing to the band's clash in my carvibe

"Next time," Delancy says. "I promise."

I take out the vibe and watch the singer's silent screaming. He throws himself to the stage floor and writhes in torment.

Delancy stands to leave. I'm disappointed that he hasn't tasted his drink. I chose the noxious stuff so carefully, an effort to get him aligned with the environment. "You'd better have a good story ready for the suit," I tell him. He doesn't understand. Used to privilege, he thinks being an ignorant genius will protect him. It hasn't done much for me.

The robot server hums over with another drink. I switch empty for full. The server's monitor displays the meaningless symbols of the tab. I take the prepared bills from my pocket. Press them into my palm until I feel the lump wrapped inside. Slide the packet into the slot. Whatever else happens, the actions, and the hope, are part of my routine now.

I place the vibe back in my ear for mercy. Isolation broken, the band is less terrifying to watch. Disjointed chords dance together. The hidden rhythm consumes.

A man steps up to my table. Glass held crotch level, as is the style. Suave, romantic comedy type. Practiced vulnerability in his slight smile. "Is your friend coming back?"

I shrug. "He abandoned me."

He sits down smoothly, weightlessly. "Maybe you need a new friend."

The bar vibrates with neon butterflies. I collect them and hold them inside me, savoring the warm flutter of wings.

Butterflies stir from sleep in a blue wave, a silky blue wave, scattering numbers. And I feel good. I feel so very good.

Fluorescent glare bounces from the smeared marker-board. Delancy, marker in hand, grins, barely able to hide the triumph, bites his lip in warning.

Remember. Hold still and remember. Delancy came through on time. Silk flows effortlessly through my blood. I lock my eyes on the floor, clench fists against my chest. I know what I must do. I've seen the vids, those terrible vids that show how numbers torment me. Numbers are the symbols for numbers.

I shove fingers in my mouth and gnaw on my nails. Gently rock, gently rock.

The sound of a door and footsteps flood into me. Wickman's footsteps.

"Is there a problem, Dr. Delancy?"

"She has become inattentive."

"Then you must get her attention back," Wickman says. I thought he only used that calm, mocking tone with me.

Delancy clunks the marker into a tray at the bottom edge of the board. "No need. The session is nearly over anyway."

Wickman hisses in a slow breath. He's used to being

obeyed. Used to others believing, as he does, that the project—whatever it happens to be at the moment—is the only priority. "Of course you realize that the equation you're working on is at a critical stage and cannot easily be dropped then picked up three days from now." He reaches into a file drawer, pulls out a filmy piece of permapaper and attaches it to his clipboard. He scratches at it with a pen then holds it out to Delancy. "I'm sure you agree, doctor, that the session must be extended."

The room suddenly has no sound except Wickman's voice.

"I've filled in the date and the time. Now that you are officially her doctor of record, the form requires your signature."

Delancy controls the forms; he controls the silk! Deception is unnecessary. So why—?

Delancy stares at the paper, on the edge of comatose. I scream at him to laugh in Wick's face. But all is silence.

Wickman's arm grows tired. "Come now, Dr. Delancy. This is my project. You still work for me."

Delancy signs, presses his thumb against the filmy paper. I rock, rock. The room implodes with sound. We each take what power we can, in whatever subversive forms we can. I hate Delancy for signing. I love him for the silk.

Delancy shoves the clipboard back at Wickman. Wick smiles, satisfied with his power. "See the clock?" Wick says to me. "It's time to write your name on the paper."

He forces the pen into my fist and slides the clipboard into my line of sight. Delancy's cowardice is written in plump letters above the line marked with an X that waits for my other name.

"No," I say.

Wickman staggers back as if doused with cold water. He shakes his head, angry with himself for reacting. He steps close to me, clipboard ready. "See the numbers on the clock?" he says soothingly. "You always sign the paper at fifty-five minutes after the hour."

I follow his pointing finger to the digital readout on the wall. Remnants of numbers flicker in my head. I've watched a similar scene on vid. This one will have a different ending.

He swivels his pointing finger to me and taps my fist clenching the pen, a tap for each word. "Now it's time to sign."

"No."

"She refused, doctor. Twice," Delancy says, rejoining the living. "According to the articles of the Bailout Act—"

"I don't need you to quote me the law," Wickman shouts. He frowns and looks back and forth between us. I rock and rock. Delancy stands so rigid I fear he'll shatter.

Wickman clatters the clipboard onto his desk and slowly forms his predator smile. "Take good care of your patient, Dr. Delancy," Wick says and stalks from the lab.

Delancy blanches. His eyelids twitch as if his spirit is going to leave again, but he hangs on.

Wickman knows. And is more dangerous because of it.

Delancy and I give one another furtive warning looks. A lighted square glows on a panel of squares. Cameras record our movements, so the celebration will have to wait. We go through the routine. He pretends to give me another dose of silk and I pretend to accept its influence.

Following my usual pattern, I leave the lab and go to the public comment area to review the news that passed while I existed as my other self. There is less volume than usual, which reaffirms the euphoria I've felt since the beginning of the silk. Delancy slipped the blue wave to me right at the end of my tolerance cycle. No rejection. No ache. A smooth transition into gossamer folds.

I have what I want. Delancy has what he wants. According to the recorded newscaster, the *Pilgrim* missed its primary window due to "unforeseen difficulties" with the Ultra-whatit. The next launch date is given, incomprehensible to me. The newscaster describes it as "early within the secondary window."

I let the vid run. The reporter is handsome in a granite-faced way. Sculpted by an artist. Surgically perfect.

And if Delancy and I manage to continue the charade until that window closes too—then what?

"... experts have been added to the ship's crew in case problems arise after the launch," says the screen image through the curvilinear.

More people on Delancy's conscience.

Once the crew of the *Pilgrim* is safe, will he continue to stretch his humanitarian streak so that it touches me?

In the subdued public comment area I devour Jung, Chekhov, Hesse, and a play in the new deltan style destined to remain obscure. Tiny sounds float through me, whispered politeness, considerate isolation, shared respect. What does the suit do while I read?

Stronger in spirit, I wander to the bar, uncertain if I will slip a packet to the bartender.

Numbers tag symbols, then run away. Symbols melt to a blur. Silk rolls strong. Strong. I squint at the harsh light.

Wickman watches me, arms folded across his chest. Delancy stutters over an equation. Tries again. Gets mired in the gibberish and gives up.

"Something wrong, Dr. Delancy?" Wickman asks, his eyes on me.

Delancy pinches the skin between his eyebrows. "I'm tired. I need a break."

I must remember something. I hold still. Numbers dance at the edge of my mind. I feel good. I feel good and the numbers scatter.

Delancy is flushed, perspiring. I stare at the floor, clench fists to my chest, rock back and forth. Back and forth. Wickman knows.

A paper is already on the clipboard. Wickman picks it up from his desk. "I have a consent form for you to sign," he says to me. "The same kind you always sign."

A lie. I didn't sign it last time.

"Only there is one small difference."

Delancy blots his sleeve against his forehead. Is the man sick?

"This one allows you to go on a trip. Remember, you

signed a paper so you could travel from Earth to here. This paper says you can go on another trip, to another place where you will live for a while."

I tuck my chin into my chest. Leave? Just when I'm making progress here. Delancy. The bartender. I rock faster, unable to slow myself. Is this a trick?

"And Dr. Delancy is going along to help you with your work."

Delancy doesn't look well enough to go anywhere. "Come now," Wickman coos, taping me on the head with a finger. "You'll have your exact same room—"

A vision of a phony window and phony photographs makes me nauseous. He's pushing so I'll break. I stare and rock back and forth. Back and forth. I've seen the vids. I know my other self. The square is lit. I'm being recorded. A legal record.

"We'll just move your entire room to the ship—"

Ship. So Delancy and I are the experts mentioned in the newscast. To act as backup in case the Ultra refuses to talk to the *Pilgrim* during flight. Astrophysicist and his idiot savant lightning calculator.

"You'll like the *Pilgrim*. Lots of nice people will live there with you, and you'll have Dr. Delancy to take care of you. You count on the doctor to take care of you, don't you? And he counts on you to help him when he has a problem too difficult to solve by himself."

Bastard. I hear you Wickman. Delancy is using me to save the *Pilgrim* because it means saving himself.

Bastards.

"Watch. I'll have Dr. Delancy sign first." He presents the clipboard and pen to Delancy with a slight bow as if bestowing an award.

Delancy grasps his potential future in quivering hands. Blood rushes from his face, leaving him ghostly and wavering.

Wickman focuses on me. He's testing. Testing.

Don't do it, Delancy. I scream through silence. Feel your power. Take control. Don't run the maze.

Delancy's plump fingers jiggle the pen across the paper. He presses his thumb into the sensitive rectangle. His puppy eyes full of self-pity. Self-loathing. Defeat. Look to me with hope. I'm to save him when he didn't save himself. I can't tolerate stupid while I'm on silk. I can't stand self-pity and helplessness.

Wickman retrieves the clipboard and pen before they slip from Delancy's hands. "You see, your friend Dr. Delancy knows that this project is important and should not be halted because of one person's unfounded fears."

He believes it. His work is the only philosophy he knows, his only god, his only ethic.

He puts the clipboard in front of my stare, holds the pen out to me. But I've seen the vids. He made sure I saw the vids.

"No," I say.

Wickman smiles without surprise. Delancy takes a prolonged breath, wipes his face with a corner of his lab coat.

"Perhaps I didn't explain it clearly enough," Wickman says.

"It isn't time," I say. "The paper doesn't come until"—I have no numbers. I cross my arms tighter over my chest.

Back and forth. Back and forth. I have no numbers. I'll betray myself, and my actions will be ruled invalid—"until the clock says it's time."

"And what time is that?" Wickman asks, waving the clipboard before my staring eyes.

"Doctor." Delancy puts a hand on Wickman's shoulder. Wickman turns sharply and knocks it aside. He doesn't like to be touched because it implies power. Because it's how he shows me he's in control.

Delancy's fear is white on his cheeks, but he can taste victory and it makes him bold. "Dr. Wickman, you know that forcing an autistic patient to act outside of a set routine can trigger a violent episode." Delancy deflects Wick with doctor talk. Reminding him I'm not a person with a name. I'm a patient with a named condition, incapable of acting without a given direction. Incapable of engineering my own maze. "It is now less than forty-five seconds until five minutes to the hour, when the consent form is usually presented to the patient. Surely you can wait that long."

The numbers on the wall progress without me. Delancy smiles at the clock. "There. Now everything is in order."

I blink and focus on the paper. Wickman slides the pen into my fist.

Carefully, routinely, I write the terrible words my parents gave my other self before they turned me over to the feds. Precisely on the line with the X at the beginning, forming each letter as I do every time I write those words. Then I press my right thumb against the heat-sensitive rectangle beside the name, as I always do after I write those words.

Delancy stands bleached and trembling, eyes staring, mouth opening and closing without a sound.

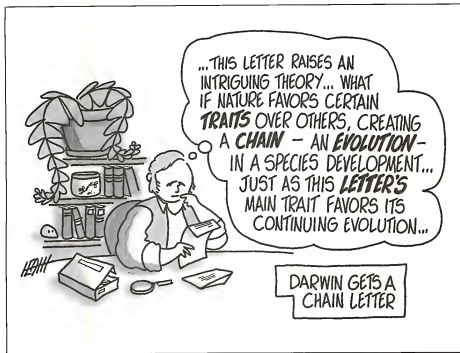
Wickman takes the document and pen. I expect a glout but his face is sober. He touches a lighted square. It turns dark. The cameras have stopped.

"It isn't legal," Delancy whispers. "She's on NS. I gave it to her myself."

"Come now, Dr. Delancy. You must focus on the greater good. The *Pilgrim's* flight benefits all humankind." Wickman doesn't look at his colleague. He files the pernapaper consent form and begins making notations as he always does at the end of a session.

"I'm not coming back," I say.

"Of course," Wick says. ♦



My Amazing Stories

Julius Schwartz with Elliot S. Maggin

The editor of *Amazing Stories* leaned back in his chair and, for reasons only he knew then and only God knows now, shared what must have been terribly private thoughts with a teenaged boy who could not possibly have understood the subtleties of so ancient a mind.

"Space travel can't work, you know," he told me.

Old men like T. O'Connor Sloane talked like that all the time back then. It was about 1934. Albert Einstein was an eccentric dreamer who had just moved to New Jersey; John Glenn was a teenager in Ohio dreaming of barnstorming; George Lucas's parents hadn't even heard of each other. When the atom had yet to be split and the megabyte was a meaningless concept, there just wasn't enough thrust in the world to get a payload to escape velocity, and here I was selling Dr. Sloane stories about light speed and space warps.

And he was buying them, despite his old man's cynicism. He was the editor of a magazine called *Amazing Stories*, and he was intimating that he just didn't buy off on the magic.

I was a literary agent for science fiction writers. It was my job, along with that of my friend Mont Weisinger, to figure out who among the dozens of established writers whose work we read we would try to sell. I made these decisions on the basis of my personal taste—a fanboy with the keys to the kingdom. I was the first literary agent for science fiction writers, and had I known then the kind of influences my capricious de-

Memoirs of a Time Traveller

Part 1

cisions would have on the condition of the collective sense of wonder of the generations to succeed me, I would have studied harder; would have spent more time reading; would have made more effort reasoning; would at the very least have gotten a lot less work done.

But there was not much chance of my understanding the implications of what my friends, my clients, my fellow fans and I were building in those days: I had T. O'Connor Sloane to bust any bubbles that might have the temerity to peek out from under the brim of my ego.

It is remarkable and delightful to me to offer my memoirs to *Amazing Stories*, because it was this very magazine that woke me up to my life's work. The very day it happened sits in my memory like the lump that sits in my throat when I think of it. It was when I was thirteen—in the summer of 1928, the last year of America's innocence—that my friend Charlie Whelan bailed me out of a bored, rainy, penniless afternoon.

My problem this afternoon was that I had nothing left to read. You bought magazines in little Mom-and-Pop shops in those days. Mine was at 187th Street and Webster Avenue a block and a half from The Bronx apartment where we lived. It had all

the standard candy store stuff: bubble gum in paper wrappers, big glass apothecary jars containing long strings of licorice you could buy by the foot, a soda fountain where you could get an egg cream where they sprayed the syrup around with seltzer instead of stirring it so it came out just right, and a wall full of magazines that reached up to the sky.

I loved the paperback dime novels, mostly detective fiction like Nick Carter and sports stories about Frank and Dick Merriwell. Dime novels were fifteen cents then, and I was penniless. I had a lot of books and magazines Charlie hadn't read; he had a lot that I hadn't read. We went through each other's stashes and what caught my eye was the cover of a two-year-old issue—June of 1926—of a magazine of which I had never heard before called *Amazing Stories*.

The cover illustration was signed simply "Paul," and it featured a giant sea serpent rising out of the sea to loom over three men on a raft. It accompanied the second installment of *A Journey to the Center of the Earth* by Jules Verne. Some issues later there was a letter to the editor inside the magazine from someone bubbling over a previously published Verne story referring to the nine-

The Pioneers



Hugo Gernsback, the first editor of *Amazing Stories* (1926–1929)

All photographs from the personal collection of Julius Schwartz



T. O'Connor Sloane, Gernsback's successor, who believed space flight was impossible

teenth century French science fiction pioneer as a "promising new writer." The installment cried out for an illustration like Paul's. In the course of describing the scene with the serpent, Verne actually apologized to the reader for not being able sufficiently to convey the desperation of the moment.

I read that issue of *Amazing Stories* cover to cover. It had an old story inside by Verne's old rival H. G. Wells called "The Star," as well as pieces by G. Peyton Wertenbaker, Otis Adelbert Kline and Charles W. Wolfe. The story that hooked me, though, was "The Runaway Sky-scraper" by Murray Leinster, whose opening line sucked me right in:

The whole thing started when the clock on the Metropolitan Tower began to run backwards.

I met "Murray Leinster" many years later and found that he was really Will Jenkins, a writer for slick magazines like *Collier's* and the *Saturday Evening Post*. He had a talent and a passion for science fiction but felt he couldn't afford for his more reputable clients—the editors of those slick magazines—to know about it. The first line of "The Runaway Sky-scraper" taught me how to hook a reader into a story. Years later, as an editor for DC Comics responsible for plotting and assigning a score of stories a month, my best trick was a

narrative hook that goosed a writer into telling an intriguing story which sucked a reader into involving himself in it.

Here's a narrative hook for you: "It was the best of times; it was the worst of times." I came up with a few good ones, too. In comics I used my covers to do it. There was a comic book showing a stark closeup of the Flash holding up a hand and shouting, "STOP! DON'T PASS UP THIS MAGAZINE! MY LIFE DEPENDS ON IT!" Another cover portrayed a giant gorilla gnashing his teeth and holding up an empty Flash costume. There was a cover of *Superman* that showed the hero running headlong at the reader with the right side of his body normal and his left side bubbling and melting along with the title: "Man of Molten Steel." That's the way they worked. As often as not I would have the hook or a cover before a writer had a story. If an idea confounded a writer enough to make him sweat, then the story that came out had to be good.

Most of the material in that issue of *Amazing Stories* was reprinted from classic stories or from other less specialized magazines. Hardly anyone was writing science fiction at the time; the field was not lucrative enough. So all of a sudden I had found an esoteric field about which I could know virtually everything and hardly anyone else knew anything.

Hugo Gernsback was the original



Frank R. Paul, the dean of science-fiction illustrators

editor of *Amazing Stories* when it made its debut with the April 1926 issue. Three years later he left to start a magazine called *Science Wonder Stories*. Both magazines had columns announcing the formation of science fiction clubs in various cities around the country. In 1931 I was just past my sixteenth birthday when I found a club called The Scienceeers, which met on Moshulu Parkway in The Bronx at what turned out to be the home of one Mortimer Weisinger.

Mort was a lovable kind of kid who had an easy way of making friends. I walked a couple of miles across The Bronx because I didn't have trolley fare and showed up for the meeting in the basement of the house where Mort and his parents lived. As I started down the steps to the door I was stamped by a dozen

The Scienceers



Members of the group in 1931 included (front row, from left) Arthur J. Berkowitz, Lester Blum, Leo Schubert, David Stark; (middle row) Herbert Smith, Philip Rosenblatt, Allen Glasser, Mort Weisinger; (back row) Arthur Erreger, William B. Sykora, Julius Schwartz, (unidentified), and Isidore Manson.

or so other kids tripping over themselves to get out. It almost marked the dissolution of The Scienceers because of Mort's creative bookkeeping.

"Well," Mort explained to me, "we pay ten cents dues each meeting, y'know, for expenses and to put out a club bulletin called *The Planet*, and when I gave the treasurer's report I announced that there was zero dollars and zero cents in the treasury. I explained that I saw some science fiction magazines and I bought them"—Mort hesitated, looked at the ceiling—"and I went to the movies and I spent the money on a date. I told them I was going to replace it but they got so mad they all stormed out."

I was the friend who stayed. We met that day when we were sixteen

and stayed friends until Mort died almost fifty years later.

In due time we reorganized, but meanwhile Mort and I became close friends. We pored over every issue of *Amazing Stories*, *Wonder Stories*, *Astounding Stories*, practically memorized them, tried to stump each other about their contents. The way it worked was that Mort and I would send each other penny postcards with questions, and we had to be honest and answer them if we could without looking up the answers. He would say, "What is the caption under the illustration for 'The Moon Pool' by A. Merritt?" I would send him back a card with the answer and ask, "What's the last line of 'The Skylark of Space'?" and so forth.

We had heard about people who

memorized the telephone book. We knew there were scribes who made their livings by memorizing and transcribing the *Pentateuch* on parchment scrolls. We knew it was possible. Why it was desirable we had no idea, but I can't recall anyone ever asking us why we memorized entire issues of *Amazing Stories*. The reason was probably because we were sixteen and no one else had done it.

I always looked at the "Coming Next Issue" section in any magazine first—still do, with *TV Guide*, trawling for thirties movies on television. It's a way of foretelling the future. When The Scienceers re-formed, Mort and I made a case to the group that we should be interested in doing more than discussing the stories

The Wordsmiths



David H. Keller, a successful physician who also became one of the most popular writers in the early days of science fiction



Edward E. ("Doc") Smith, author of *The Skylark of Space* and other classics



Forrest J Ackerman at age 15 in 1932, the "scientifilm" editor of the first SF fan magazine

in the magazines we devoured. We wanted to know how they came about; we wanted to know more about the writers, the editors and illustrators. We resolved to find out what was coming up next, what these idols of ours were working on. We decided to compile a *Who's Who* of contemporary science fiction for our club bulletin. We wanted to see into the future, so we sent out letters.

We got lots of enthusiastic answers. The first came from E. E. "Doc" Smith; from Dr. David H. Keller, our favorite writer; from several prominent professionals who didn't have the sophistication at the time to hire agents to tell them not to write anything for free.

Late in 1931 I typed up a one-page biography of Edward Elmer ("Doc") Smith and it got Mort all excited. We looked at each other like Mickey Rooney and Judy Garland and instead of "a show," we said, "Let's put on a fan magazine!" I wish I had that "Doc" Smith piece now. Mort and I together started the first fan magazine about science fiction,

which I was inspired to call *The Time Traveller*. I had just read H. G. Wells's *The Time Machine* and I was steeped in Briticisms, so I insisted on spelling the title with two I's.

The first "fanzine"—it was dated January, 1932—consisted of six mimeographed pages, and we sold it for a dime, twelve issues for a dollar. That was where we roosted our gossip. At sixteen, neither of us had the confidence to call himself the editor, so we shanghaied a fellow Scienceer whose claim to fame was an extensive array of letters published in pulp magazines. Allen Glasser was not only the editor of our club bulletin—he was also a pro. He had sold a story to *Amazing* called "Across the Ages." We rounded up several other of the better known fans of the day to supply us with news and gossip. Among them was fifteen-years-young Forrest J Ackerman, our "scientifilm" editor from Hollywood who years later coined the term "sci-fi."

We allocated editorial responsibilities easily enough. Everyone con-

tributed whatever information he had that month. Then Glasser stencilled the first two pages, I did the next two, and Mort took care of the last two. The first issue contained the first installment of "The History of Science Fiction." What we did not realize at the time was that its history was actually about to begin.

The reason *The Time Traveller* worked as well as it did as a means of getting fans in touch with other fans was because we published the full addresses of our letter writers. I did the same thing thirty years later as a comic book editor when I printed correspondents' addresses in my letters columns. All over the country, in small ways, an organism began to come together. People interested in each other's points of view would write to one another. They compared notes. They introduced friends. They shared gossip. They bounced around ideas. Science fiction and science fiction fandom began to take on the dimensions of a community much as scientists themselves have done over the centuries. When people of simi-

lar interests share ideas, movements grow. In our case, the Earth moved slowly, imperceptibly, over a lifetime.

So did it come to pass that science fiction fandom, and later on that of comic books, attracted the people with the biggest mouths on Earth. That applies to me as much as it does to anyone. Unarguably, we put together a new body of ideas. What ever becomes in the unborn centuries of the speculations to which I contributed, the founding of that community, the conceiving of that organism, will be the achievement of which I am most proud.

We started with about thirty subscriptions. After two mimeographed issues Mort and I happened upon a subscriber named Conrad H. Rupert who had the equipment to set type by hand and print it in a professional manner. With his help *The Time Traveller* evolved into a better-looking product we called *Science Fiction Digest* and eventually *Fantasy Magazine*. The most exciting thing we put into the magazine was a series of stories called *Cosmos*, the longest "round robin" story ever published, with contributions from the most prominent science fiction writers of the time. A. Merrit, Otto Binder, "Doc" Smith, Ralph Milne Farley, Dr. David H. Keller and John W. Campbell were among the writers who wrote chapters before I dumped the mess into Edmond Hamilton's lap to wrap it up in the seventeenth installment. *Cosmos* spanned the transition from *Science Fiction Digest* to *Fantasy Magazine*, stretching from the July 1933 issue of the former to the October/November 1934 issue of the latter.

I had a habit of seeking out science fiction stories in magazines other than the regular science fiction publications like *Amazing*. They showed up here and there in the weekly pulp magazine *Argosy*, under the label of "A Different Story." I let my correspondents and friends know that I was interested in buying copies of such stories.

One day a fellow Scienceeer showed me a story in the April 1929 issue of a magazine called *Munsey's* called "The Heat Wave" by M. Ryan and R. Ord.



The author in 1939
at the first SF Worldcon

"Are you sure it's science fiction?" I asked him, and he said, "Check it out," which I did . . .

. . . and my face slowly, painfully, lost its color.

The story read, word for word for the most part, the same as "Across the Ages," Allen Glasser's story in the August 1933 *Amazing Stories*. My friend Allen was a plagiarist, but he couldn't help trying to improve on the original. I remember the last line of the original *Munsey's* story: "He stared at her with horror in his eyes." Allen changed it to "He stared at her with dawning horror in his eyes."

It was a literary crime, and we had to report it.

Mort and I had this habit of running up to the Manhattan offices of *Amazing Stories* at 222 West 39th Street and talking to the editor about what would show up in future issues. The editor was Dr. T. O'Connor Sloane, a prominent inventor and resident great gray eminence.

Thomas O'Connor Sloane was born on November 24, 1851, which wasn't such a big deal at the time, but when I consider now whom he talked to, how he lived, and the fact, for example, that today I write these words on a word processor and submit them instantly to someone across a continent by fax, my little kid's sense of wonder gets all exercised again. Sloane went to St. Francis Xavier College and Columbia University and was a Professor of Natu-

ral Sciences at Seton Hall College for a time in the late nineteenth century. He invented a piece of equipment called a self-recording photometer, which was the first device to record mechanically the illuminative power of gas; and in 1877 he designed a new method of determining the sulphur content of illuminating gas. He had been on the staff of a number of magazines, including *Sanitary Plumber and Engineer*, *Everyday Engineering*, *Practical Electric*, *Youth's Companion* and *Scientific American*. Now, about to turn 83, he was editor of *Amazing Stories* with a placard on his desk with a line from *Old Man River* that said, "I'm tired of living and feared of dying."

Dr. Sloane was the man to whom we went when we exposed Allen Glasser. Allen published no more science fiction stories, and Mort and I published no more *Time Traveller* from that point. Glasser published one more issue on his own, but Mort and I moved on to *Science Fiction Digest*.

We felt badly, but Dr. Sloane seemed to like me quite a bit after that—at least he suffered me more readily. He gave me advance copies of the magazine whenever I came to see him. I would sit in the subway on the way back to The Bronx ostentatiously holding up next month's *Amazing Stories* in front of my face for all the world not to notice. Little did my fellow straphangers know that among them was someone who, without any effort or fuss, was a time traveller reading the future.

Here were Mort and I, in touch with most of the writers and editors of all the science fiction mags in the explored Universe. I knew the people who published not only *Amazing Stories*, but *Wonder Stories* and *Astonishing Stories* as well. It made sense for us to make some connections among them.

Once in a while Dr. Sloane or F. Orlin Tremaine, the editor of *Astonishing*, or one of their colleagues, would say something like, "I wish I had a 4,000-word time travel story for the hole in next month's issue," and with a heavy sigh he would tackle the pile of unsolicited manuscripts that hung out on his desk.

Mort said, "Julie, the writers don't know what these editors need."

"What do you mean?" I asked him.

"I mean, these guys sit at their typewriters churning out stuff blind as bats, hoping somebody will pick up on them."

"So—?"

"They need an agent," Mort said, and the subject took on a life of its own.

We were kids, not yet out of our teens, when Mort and I put together an agency we called *Solar Sales Service* and decided to set the world on fire. We sent letters to every science fiction writer whose address we could dig up and said that we had:

... made an extensive survey of the entire science fiction field, through a series of talks with the various editors, and as a result we are firmly convinced that fantasy fiction is due for a renaissance.

We went through the general needs, as far as we could determine, of each of the publications whose editors we had talked to, and:

As for our terms, they are extremely reasonable. We ask only that all stories sent us be accompanied with a dollar sales service fee. This fee is waived just as soon as we sell three stories for a client. Of course, we ask the usual ten percent commission on all American sales. 15% on English sales . . .

. . . and we followed that with glowing recommendations we had solicited from Sloane, Charlie Hornig of *Wonder Stories* and several of the other professionals with whom we had had contact.

Dr. Sloane, Hornig, Tremaine, Gernsback and the other editors realized that it was to their advantage to read anything we submitted to them without dropping it in the slush pile because they knew that (1) we knew what they wanted and (2) anything they got from us was written by a professional.

Practically right out of the box we

got a package from Edmond Hamilton, a well-known writer from New Castle, Pennsylvania, dozens of whose stories we had read and enjoyed. Talk about seeing into the future! We would be the first people to read the works of our favorite writers! The 7,000-word story was called "Master of the Genes," and it came with a dollar bill folded up inside it: our first reading fee.

Mort and I opened the envelope together, all excited about the unread story inside, and looked at the dollar bill. Then I looked at Mort and he looked at me and we burst out laughing. For years we had paid to read Hamilton's stories and now he was paying us a dollar to have us read a new one? We sent the dollar back, along with the news that *Wonder Stories* had accepted the story for thirty-five dollars, 1/2 cent a word. With our ten percent commission, that meant Mort and I each took home \$17.5.

In not a very long time *Solar Sales Service's* client list included Hamilton, Dr. Keller, H. P. Lovecraft, Manly Wade Wellman, John Russell Fearn, Otto Binder, Henry Kuttner, Stanley G. Weinbaum, Robert Bloch, Alfred Bester, Eric Frank Russell, and Leigh Brackett. It also included my first "discovery," a young paperboy from Los Angeles named Ray Bradbury who in 1939 based across the country to attend the First World Science Fiction Convention and meet me, confident that "One look at my sunburst face would blind Julie," that his talent would overwhelm me and that we would "all be famous together."

We were on our way. Where? We had no idea. All we knew was that the more we rubbed elbows with the guys who made the story decisions, the better our agency would do. That was what brought me to that bag chair in the office on West 39th Street opposite that big little old man.

"It just seems so . . . silly, doesn't it?" Dr. Sloane asked me when he leaned back in his chair to wax philosophic that day.

I didn't get what he meant.

Here he was, he explained, an inventor of serious scientific devices

and contributor to serious scientific journals, editing and publishing stories about ships flying to other planets and such nonsense.

"Mankind will never be able to travel into space," the estimable editor of *Amazing Stories* told me.

"Why not?" I was incredulous.

"It's scientifically impossible," he said and gently, indulgently, like a master explaining to a puppy where to leave his by-products, he explained why.

I was nineteen at the time, ambitious and headstrong, and I had gone through years of positive reinforcement in my schooling that convinced me beyond the ghost of a doubt that I wasn't an idiot. But this man was, after all, an entry in *Who's Who*. I kept feeling I ought to have been more impressed with this.

"Wasn't there some scientist," I asked him, "sometime in the mid-nineteenth century who proved mathematically that a heavier-than-air machine could not possibly fly?"

"Oh, don't be such a boy," the old man admonished me, clearly intimating that a boy was precisely all he wanted me to be.

My mind churned over one rationale after another, and in defense the old man just tossed me one pitying look after another as easily as blowing a kiss. "Someday," he assured me, "you'll understand."

Soon I'll be as old as Sloane was at the time. I still don't understand what he was getting at.

He was educated, prominent, and extraordinarily qualified for virtually any literary vocation. I respected him; I still do, mostly. Science fiction in those days consisted of speculations on space travel, artificial life, weather control and the like. These were concepts that were closer to reality in the 1930s than are time travel, dimensional leaps, machines with minds and such other contemporary subjects today.

Despite the prejudices with which his provincial nineteenth-century education hobbled him, that old man should have known better. I try to.

Next: "The Bester Years of My Life," in the July issue of *AMAZING Stories*

SF the British Way

James Gunn

1

The road to today's science fiction has been long, strange, and wonderful. It started in ancient times as a way to reach other lands or other worlds, where the life or the way it was lived was different. Ancient storytellers built it as a means of traveling to imaginary places beyond the limits of experience: Hyperborea, the Fortunate Isles, Panchala, Ismaus . . . and the moon. Another destination, pioneered by Plato's "The Republic," was the ideal society, the utopia. The Industrial Revolution broadened the road and made its destinations seem achievable in the real world. Change became reality, and the response of writers to that reality created the literature of change, science fiction.

John W. Campbell, the editor of *Astounding Science Fiction* who presided over what Americans called the Golden Age of science fiction, once said, "Fiction is only dreams written out; science fiction consists of the hopes and dreams and fears (for some dreams are nightmares) of a technically based society." The dreams of science fiction became a genre primarily through the American SF magazines, which brought together the enthusiasm and the ideas of the people who read and wrote and edited and published science fiction and let them work out a vocabulary, a set of literary conventions, a shared world of expectations, and their hopes and fears for the future.

But not all societies develop their technical bases at the same rate, and the experience of change differs from nation to nation. Those people's dreams, too, will not be quite the same. Great Britain, for instance, was there at the beginning and contributed mightily to the shaping of the genre, but to American readers, Brit-

ish science fiction always seemed perceptibly different.

To the British, too, Brian W. Aldiss, one of Britain's greatest SF authors as well as its most distinguished theorist in *Billion Year Spree* and its recent revision with David Wingrove, said in *Trillion Year Spree* about Gregory Benford's *Timescape*, "It is a dark, pessimistic work, almost, one might say, British in its preoccupations."

That difference is what this essay intends to explore.

2

Science fiction got started in Britain and France, the birthplaces of the Industrial Revolution. Brian W. Aldiss dates the beginning from Mary Shelley's 1818 *Frankenstein* and believes that SF continues in the Gothic (or post-Gothic) mode. Not all American readers share Aldiss's view of SF's origins, finding the Gothic elements of *Frankenstein*—the sense of sacrilege, the brooding shadow of the supernatural, the feeling of traditional patterns being worked out—at war with its exploration of new scientific possibilities. Aldiss points out that *Frankenstein* marks the birth of a modern attitude when the Doctor turns from the old masters of alchemy to science, but he also becomes the prototype for the mad scientist not so much for his blasphemy in daring to create life but because, unlike a man of science, he shrinks from what he has created because he thinks it is ugly.

After contributions to the literature of change from American authors Edgar Allan Poe and Nathaniel Hawthorne and the Irish-born American immigrant Fitz-James O'Brien, Jules Verne indisputably got SF going with his *voyages extraordinaires*, in spite of the fact that they were placed in the present and mostly speculated

about improvements in technologies already in existence. No such qualifications are necessary about the work of H. G. Wells. More than any other writer, Wells created modern science fiction and established most of its significant themes. Where Verne explored places with his submarines and cannon shells, Wells explored ideas; adventure provided a structure on which to hang occasional speculations, but ideas created the genre.

The British experience gets its characteristic flavor and direction from the Wells of 1894, when he first began publishing his "single sitting stories of science," to 1904, when he published "The Land Ironclads" and the first of his propaganda novels, *The Food of the Gods*. The Wells of *The Time Machine*, *The Island of Dr. Moreau*, *The War of the Worlds*, *When the Sleeper Wakes*, and *The First Men in the Moon* gave science fiction, and British SF, what Damon Knight has called "the mood of pessimistic irony" that much of American SF has lacked.

3

Popular magazines were an essential ingredient in the evolution of science fiction, and the first of these was *The Strand*, created in London in 1891 by George Newnes, ten years after he had founded *Tit-Bits*, a popular compendium of short items and clippings from a variety of sources. Competitors soon appeared: *The Ludgate Monthly*, *The Pall Mall Magazine*, *The Idler*. . . . Comparable publications on the American side of the ocean were *McClure's* and *Munsey's*. When they demonstrated the viability of cheaper publications in the mass market, such older quality magazines as *Peterson's Magazine* and *Cosmopolitan* reduced their prices and adjusted their contents.

In the U. S., however, the most important development for science fiction was the creation of the pulp adventure magazine in 1896, when Frank Munsey, who had come to New York from Maine to make his fortune, converted his boys' magazine *Argosy* (born as *Golden Argosy*) into "192 pages of fiction for a dime." It, too, would inspire such competitors as *The Popular Magazine*, *The People's Magazine*, and *Bluebook*, and Munsey would respond with *All-Story* and *Cavalier*. In this medium American science fiction would develop, first in scattered examples of adventure stories against a background of change rather than that of the Wild West, the Civil War, the Orient, or one of the other exotic milieus for exciting conflict, and finally, with the invention of the category pulp, which gathered together stories of the same type into a single magazine, in the 1926 *Amazing Stories* followed by *Wonder Stories* in 1929 and *Astounding Stories of Super Science* in 1930.

Britain had no such pulp magazines and, of course, no adult science-fiction magazines either (*Scoops*, a weekly boy's SF magazine published 20 issues in 1934) until Walter Gillings, editor of *The British Scientific Fantasy Review*, edited *Tales of Wonder*, which published 16 issues between 1937 and 1942. *Fantasy*, another Walter Gillings magazine, was published in 1946-47 (an earlier magazine with the same name was published by Newnes in 1938-39). E. J. "Ted" Carnell edited *New Worlds* from 1946-47 and from 1949-64 (it was the news organ of the Science Fiction Association from 1937-40) before it was sold and Michael Moorcock turned it into what Aldiss called the "pirate ship" of the New Wave. *Science Fantasy* was edited by Walter Gillings for two issues and then by Carnell from 1950-64. Between 1949 and 1954 the British magazines had to compete with reprint editions of half a dozen U. S. pulps, including the British edition of *Astounding*.

In the U. S., on the other hand, as Brian Stableford describes in *Scientific Romance in Britain 1890-1950*, "the marketing of popular fiction in the U. S. clearly reflected the more aggressive entrepreneurialism of

American marketing in general." Hugo Gernsback, the Luxembourg immigrant who founded *Amazing Stories* as the successor to a series of popular-science magazines, in recent years has been blamed by European SF writers for most of what they think is wrong with American SF. Aldiss, in *Trillion Year Spree*, called him "one of the worst disasters ever to hit the science fiction field."

"The establishment of magazines which specialized in SF alone—excluding all else—institutionalized the division between highbrow and lowbrow," Aldiss commented. "Such classification, never openly acknowledged, led eventually to some prodigies; but for a short period it debased the product by appealing to an ardent and uncritical readership; while in the long run it induced an 'SF ghetto' mentality from which both readers and writers still scheme to escape (or imagine they have escaped)." Nevertheless, it is difficult to imagine how science fiction would have grown to its present state of popularity, opportunity, multiplicity, and fecundity without a period of intense cultivation in "the science-fiction ghetto." This is not to say that all this happened without cost, nor that the present condition of SF is ideal.

Gernsback's critics may envisage a gradual proliferation of the kind of fiction relatively unsegregated from the mainstream such as Wells was writing in his first ten years, but Wells himself abandoned that kind of fiction in 1904 and few others picked it up because, Stableford believes, the conditions in Britain were unfavorable. He pointed out: "The decline in fashion which affected scientific romance after 1905 continued until the outbreak of the Great War, and then was further emphasized by changes in the literary marketplace that were encouraged by the disruptive economic effects of the war."

Moreover, the scientific romance was not considered mainstream fiction, even in Britain. "Such tales always have to overcome a certain generic disreputability before they can be applauded," Stableford has observed, "and it is almost always as ex-

ceptions that they win respectability." Even the authors themselves, including Wells, looked back upon their early ventures into fantastic fiction ("scientific romance is, in the main, a young man's genre," Stableford comments) as youthful indiscretions.

The flaws in Gernsback's own fiction are easy enough to decide, but then Gernsback was an inventor and a businessman, not a writer. His vision and entrepreneurial panache (Aldiss praises Gernsback's initiative, energy, and courage) are what lie behind Sam Moskowitz's description of him in *Explorers of the Infinite* as "the father of science fiction." Moreover, *Amazing* did not restrict itself to Gernsbackian catalogs of future inventions or futuristic adventures. It reprinted almost all of Wells's scientific romances as well as most of Poe and Verne. Gernsback also opened up for a generation of writers, such as Jack Williamson, the concept of authorship and a life in science fiction. And Gernsback provided the model for the Clayton *Astounding Stories of Super Science*, which, when it was sold in 1933 to Street & Smith, came under the shaping editorship of John W. Campbell in 1937.

All these things might have happened without Gernsback, possibly even without what Aldiss calls the "deadening literalism" created by Gernsback's emphasis on the need for scientific accuracy, but that eventuality is not at all certain. *Amazing Stories* came along late in the age of category pulps, and only a few years before the beginning of the hero pulps. And it is arguable that *Amazing* emerged not from the pulp tradition but the popular-science tradition, and that this not only set the SF magazines apart in spirit but in fact was the reason they survived the general demise of the pulps in the 1950s and 1960s.

A reasonable assumption is that the genre of science fiction would not have evolved in Britain, which apparently needed the example of the American magazines to inspire its own, and without the magazines a great many writers would never have been heard. Beginning writers need a place to get published and to develop. To start as a novelist may

not only be considerably more difficult for some it may be impossible. And SF, which may be at its best in the shorter lengths, would be considerably poorer.

In spite of the criticisms of the wrong turning taken by the scientific romance when Gernsback founded *Amazing*, many prominent British writers (including Aldiss) trace their earliest conversion to SF to the American magazines imported to Britain in the 1930s as (according to legend) ballast and sold at the local Woolworth's under the heading of "Yank Mags." In fact, Arthur C. Clarke wrote a 1989 memoir titled *Astounding Days* focused on his reading of one of those magazines.

4

Other conditions than the scarcity of magazines contributed to the differences in British SF. The success of the Prussian forces in the Franco-Prussian War of 1870, for instance, resulted in a rash of cautionary stories about the lack of British preparedness. Lieutenant-Colonel Sir George Tomkyns Chesney's "The Battle of Dorking" in 1871 was the first and Wells's 1898 *The War of the Worlds*, which shifted its focus to the lack of *human* preparedness, was the most prominent SF example.

The 20th century, as well, treated Britain and the United States far differently. World War I, for instance, was a shattering experience for Britain not only in loss of life but in its loss of faith in progress and British destiny. "The United States was the only real winner of the war," Stableford writes, "enjoying an economic boom throughout the 1920s while Europe was in economic decline. . . .

Modern technology really did seem to be bringing about a social metamorphosis in the USA, while Britain remained mired in economic chaos, seemingly abandoned by progress. It is hardly surprising that speculative fiction began to boom in America, producing a kind of science fiction which rejoiced in the limitless opportunities of futuristic adventure and looked forward to a plethora of new inventions, while the British public remained unmoved and unresponsive."

As an example, Stableford points out, the interplanetary fiction that was a subspecies of the scientific romance became irrelevant in Britain between the wars, while in America it became increasingly important. America has always been perceived as a place for new beginnings, first for religious freedom, later for economic opportunity, and between the two the frontier beckoned as the ultimate alternative to stagnation and despair. As far back as De Tocqueville, a series of foreign observers have commented on American belief in the progress of the human spirit. One 19th century American said, "We are always expecting an improvement to be found in everything."

Wells called the years between the wars an "Age of Frustration" for Britain, and they produced, according to Stableford, "an anxious and often embittered kind of fiction, in which the world of the future loomed as a nightmarish threat far more frequently than it heeded as a wonderland of opportunity." This kind of speculative fiction, he points out, was not at all like the American SF of the late 1920s, and "it is safe to say that for the entire period between the two world wars British scientific romance and American science fiction

were poles apart, with only a tiny measure of overlap between their theme and methods." This period, it might be noted, included the first years of the American Golden Age.

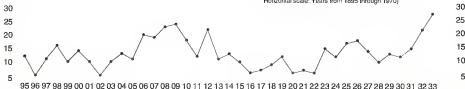
"In the wake of the Great War," Stableford believes, "the British intelligentsia had become very suspicious of the idea of progress." He summed up: "One may complain of early American science fiction that its authors wrote very crudely, and took no account of contemporary speculative thought regarding the advancement of science and the developing pattern of social change; but one might argue also that British scientific romance remained a little too dependent on such contemporary discussion, and was overly constrained by its anxieties."

The Depression that began in the U. S. with the stock-market crash of 1929 and raised serious doubts about the American political and social fabric as well as American faith in progress spread rapidly to Europe and may have hit harder there. Even earlier, Stableford notes, the U. S. had "nothing to compare with the British Labour Party's ascent to power in 1924 or the General Strike of 1926."

World War II started for Britain more than two years before American entry, and England bore the brunt not only of the early defeats that culminated in the evacuation of Dunkirk but the threat of invasion and the bombings. In spite of the attack on Pearl Harbor and early Japanese military successes, America never seriously entertained the possibility and the consequences of losing the war, and though its casualties were high, never suffered the same kind of losses, psychological as well as physical.

PUBLICATION OF FUTURE FICTION IN GREAT BRITAIN

Source: I. F. Clarke, *Tale of the Future*
(Vertical scale: Number of books published.
Horizontal scale: Years from 1895 through 1970)



Even the atom bomb looked different from the other side of the Atlantic. From the British viewpoint, Stableford writes, "Although the atom bomb was in the hands of an ally, it was still in other hands, and there was a long-standing anxiety in the land whose flames only needed a little fanning to make them flare up to apocalyptic magnitude."

5

Stableford cites other factors that influenced a separate direction for the development of British and American SF. Middlebrow literature—to which science fiction traditionally belongs—developed late in Britain. Before 1890 highbrow literature was controlled by lending libraries, which had grown up because of the high price of "respectable" novels and their customary publication in three volumes. The lending libraries took such a large proportion of publisher print runs that they could conspire with the publishers to keep prices high.

Between those and the penny dreadfuls and the two-penny novellettes was "a wide gap of price and prestige." Even Dickens could not bridge it successfully. After 1890 "a host of new periodicals, ranging from tabloid weeklies to plush illustrated monthlies . . . using short stories and short serial novels in abundance," filled the middlebrow gap. But the opportunities for new writers in *The Strand* and its competitors that Wells found so congenial faded after little more than a decade. "For a few brief years . . . scientific romance was fashionable as the new periodicals went through their experimental phase. That period began in 1893, reached its height around

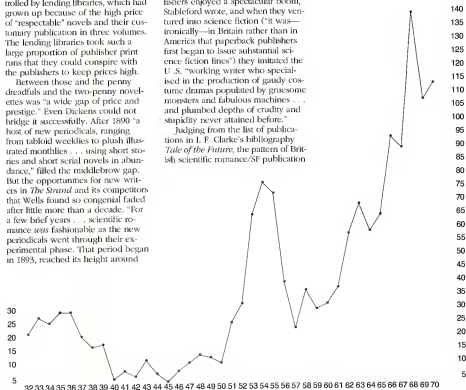
1898, and had petered out by 1905." Wells's abandonment of the scientific romance for the propaganda novel may have been encouraged by the dwindling market.

Later, while U. S. paperback publishers began to compete with and eventually supplant the pulp magazines, Britain's paperback scene was dominated by a single publisher, Penguin, that had no need to get involved with such unconventional material as science fiction, Stableford recounts. Aldiss recalls, however, that after 1960 Penguin was publishing John Christopher, John Wyndham, and John Blackham with such success that Aldiss was hired as Penguin SF editor. After the war "the more downmarket British paperback publishers enjoyed a spectacular boom," Stableford wrote, and when they ventured into science fiction ("it was—ironically—in Britain rather than in America that paperback publishers first began to issue substantial science fiction lines") they imitated the U. S. "working writer who specialised in the production of gaudy costume dramas populated by gruesome monsters and fabulous machines . . . and plumbed depths of crudity and stupidity never attained before."

Judging from the list of publications in I. F. Clarke's bibliography *Tale of the Future*, the pattern of British scientific romance/SF publication

from 1895 (the publication of Wells's *The Time Machine*) to 1970 (the last date in Clarke's study) is one of modest ups and downs until 1951, when the same postwar boom that hit American publishing also affected Britain. Mike Ashley in *The Best of British SF* (1977) called the 1950s Britain's Golden Age: "the decade of Aldiss, Tubbs, White, Shaw, Kapp, Ballard, Bayley, Ian Wright, and loads more." Although Clarke's "tale of the future" may not include all SF and the list may not be complete (Stableford raises questions about one year's titles, 1952), the accompanying graph provides a visualization of British publishing experience.

The declines between 1913 and



1918 and from 1940 to 1945 coincide roughly with the war years and may be attributed to paper shortages as well as a refocusing of minds on the present, but the sharp rise during the Depression years may require more complex rationalizations. A similar summary by year of American publications, if it existed, might show an identical low level of book publication in the years up to World War II, but the peaks and valleys might be shifted. One of the valleys would cover the years 1926–45, when much of the energy of SF writers was diverted into the magazines and virtually no magazine fiction was reprinted until immediately after the war, although a small flurry lasted from 1937 through 1943. Such a comparison, however, would not reflect the substantial contributions of the magazines to the American reading experience. The existence of the magazines may even have exerted an inverse influence on book publication, as if the general publishers had decided that fiction published in pulp magazines was unworthy of being placed between boards. Most of the books published during the 1926–45 period came from other sources—from the American mainstream or from Britain.

Britain also lagged behind the American experience in the postwar boom. America had the fan publishers to demonstrate the viability of the SF market and to contribute a substantial number of publications before Simon and Schuster, and Doubleday, and then Ace and Ballantine, got into the business.

6

The British difference came into full perspective when Michael Moorcock took over as editor of *New Worlds* in 1964. John Campbell was 27 when he became an editor; Moorcock was 24. While Campbell evolved his ideas and methods as he went along ("I wanted to learn how to be an editor," he recalled), Moorcock came in with an agenda. In his first editorial, Moorcock set up a new model—not, as Aldiss points out, Edgar Rice Burroughs but William Burroughs: "... in a sense his work is the SF we've all been waiting for—it is highly readable, com-

bines satire with splendid imagery, discusses the philosophy of science, has insight into human experience, uses advanced and effective literary techniques, and so on."

That issue also had an article on William Burroughs by J. G. Ballard, who was to be nailed, Aldiss says, to the masthead of Moorcock's pirate ship. "Moorcock's *New Worlds*," Aldiss wrote in *Trillion Year Spree*, "had few taboos. . . . It encouraged rather than rejected literary experimentation and steadily became the focus for a re-evaluation of genre standards and a crucible for new attitudes. . . . Moorcock's energy and the imagery of Ballard and Aldiss attracted a new audience to science fiction. It was, in fact, an audience already around, grokking the more way-out strata of the life of their time, but not at all tuned to the old pulp idiom, of which the Carnell magazines had been the tired inheritors."

Colin Greenland, in his book about the New Wave titled *The Entropy Exhibition* . . . describes Moorcock's *New Worlds* "into whose pages crowded a large number of writers concerned with those 'proper subjects,' the end of man—indeed, the end of everything—and the place of the future in the present. While poets and orators were making free with old images of utopia and Metropolis, star-men and robots, these writers were occupied with a newer image: entropy. They saw the degeneration of energy as a fit image for the disintegration of society and the individual consciousness."

All that might have gone relatively unnoticed by the producers and consumers of traditional SF. In the term "New Wave," however, and the revolutionary manifestoes of its theoreticians was implicit, and in Judith Merril's anthologies explicit, the belief that this speculative fiction aspired not just to a new audience but to the old one as well.

In assessing the demise of *New Worlds* Greenland says, "More daring was its aim not just to improve or enlarge traditional SF, but to replace it altogether." In another chapter, he wrote: "Moorcock's NW editorials call repeatedly not for the eager innocents who had supported the

magazine until then, but for those prepared to extend their bookshelves to unprecedented lengths. In 'Onward, Ever Onward' he specifically puts away 'Heinlein, Blash, Asimov, van Vogt,' and dashes out for the latest Penguin Europeans: Kafka, Camus, Sartre, Borges, Wyndham, Lewis, Cocteau"—a sure syllabus to ravage the innocent and overload his social, moral, and intellectual sensibilities." And Moorcock recalls, "We were surprised by the lack of response from old guard SF fans, who we had assumed were as hungry for real imagination as we had been."

Much of this can be attributed to the enthusiasm of revolutionaries. The writers assembled around *New Worlds* were not so different in attitude from those attracted to Campbell's *Asounding* in 1937 or to Anthony Boucher's *Fantasy and Science Fiction* in 1949 or Horace Gold's *Galaxy* in 1950. Each of those magazines incorporated a different vision, and in science fiction, perhaps even more than in other artistic fields, the new is not only invigorating, it is basic.

Another factor was the temper of the times, stemming in part from the American Vietnam experience, in part from the U. S. civil rights movement and the subsequent campus unrest. Greenland points to the youth culture with its hippie attitudes and use of mind-altering drugs, and Aldiss, to "Beatlemania . . . hair lengthening, consumerism . . . mini-skirts . . . a new mood of hedonism was in the air." Judith Merril titled the volume in which she proclaimed the new wave to the rest of the world *England Swings SF* (1968). But sharp breaks with the past were common around the world, and the American bumper-sticker "Question authority" bespoke the attitudes of a generation.

The battle for the heart and soul of science fiction that ensued might be said to have been won by traditional SF. The new audience that Aldiss describes and Moorcock hoped for was not sufficient to sustain the Moorcock *New Worlds* for more than a few years, and the latter part of that was sustained by a government-supported Arts Council grant as well as by subsidies from Moorcock himself. Traditional readers did not ac-

cept the new literary experimentation nor the Burroughsian images of corruption and defeat.

In the longer view the New Wave may have been victorious, its struggles for greater freedom of theme and style incorporated into the repertoire available to all writers in the field. Writers as experienced as Jack Williamson and Frederik Pohl were liberated by its example, and such recent artists as Benford and Greg Bear would have been hard pressed to produce their best work without the New Wave breakthrough.

Meanwhile the idiosyncratic leading lights of the New Wave have gone on to find their own audiences. The goal of the literary mainstream has always been individual expression, not genre development, and the audience simply was neither broad enough nor numerous enough to span the *New Worlds* spectrum. Ballard ascended to the empyrean of bestselling authors with his autobiographical *Empire of the Sins*, and Aldiss, after his own autobiographical bestsellers and some experimental novels, may have created his SF masterpiece in the *Helliconia* series, itself a return to the older concern with the influence of environment on human potential and efforts to understand and finally to cope with it. Other *New Worlds* writers have had more intermittent success, like one heir to the tradition, Christopher Priest, whose novels such as *The Glamour* sometimes have reached a more general audience and who no longer, Aldiss writes, considers himself an SF writer, to which Priest responds that he never did.

The British publishing situation, particularly for science fiction, was depressed in the 1980s and the British "difference" may have made British novels less publishable in the U. S. As Aldiss points out, "British SF writers generally have few of the advantages of their American colleagues, apart from the mother tongue. The absence of a large home market means that British writers need to sell their work abroad—in particular in the USA—to earn more than a subsistence wage. . . . Many find it hard to sell their more lyrical, less technological SF in the American marketplace. By the end of the sev-

enties British SF had become a cult de sac. Even the best writers could not guarantee that their novels would be taken up in the States. Few new writers came through."

7

Philosophically, then, British SF always has been more closely allied to the literary culture than the scientific culture, to use C. P. Snow's "Two Cultures" terms. Aldiss points out that "against all odds, English SF has never divorced itself entirely from the mainstream." In a 1959 lecture Snow bemoaned the failure of the two cultures to understand each other. They didn't read the same books, didn't look at the world the same way, and therefore they couldn't talk to each other. "There seems to be no place where the cultures meet. I am not going to waste time saying that this is a pity. It is much worse than that."

Although he attempted to be evenhanded in his criticisms, Snow's sympathies seemed clearly with the scientific culture as he went on to describe the belief by scientists that the state of knowledge, and therefore the hope for a better life for many, was continually improving, and contrasted that with the reaction of literary figures to the promise of industrialization. "If the scientists have the future in their bones, then the traditional culture responds by wishing the future did not exist." Intellectuals, he said, "in particular literary intellectuals, are natural Luddites."

The motivation for his lecture is revealed in the sentence: "It is the traditional culture, to an extent little diminished by the scientific one, which manages the western world."

Science-fiction writers of any kind are far from the seats of power, and it would be a mistake to place any group of them too firmly in any camp. No matter what generalizations seem reasonable, enough exceptions exist to question the case for any particular author; many British writers contributed regularly and successfully to American magazines and have had their novels published in the U. S. to great acclaim and popularity, and a number of American writers have received good notices

in *The Times Literary Supplement* or were welcomed into the Moorcock *New Worlds*. After readers of concurrent 1939 issues of *Amazing* and *Fantastic Adventures* voted top-story awards to William F. Temple's "The Four-Sided Triangle" and to John Russell Fearn's "The Man from Hell," Fearn wrote to Temple, "It takes me British guys to put it over, huh?" And Mike Ashley adds, "There was no doubt that any and every British writer could take America by storm. . . ."

Nevertheless, one cannot overlook the British difference, and it is not enough to attribute all the literary excellence to the British and all naive faith in the future to the Americans. After the controversy that greeted the awarding of the first John W. Campbell Award for the best SF novel of the year to Barry Malzberg's *Beyond Apollo*, Aldiss wrote that any good fiction recognizes "the fallen state of man." While it cannot be denied that much good fiction stems from that attitude, much does not, including the epic. Jack Williamson makes a case for science fiction as a modern form of the epic.

Moreover, one might note the human tendency to attribute more literary merit to the tragedy: Shakespeare's comedies, excellent as they may be, are considered lesser works than his tragedies. A consensus list of the world's great works would begin with those that end in death and destruction, and those that end happily or successfully for the individual or his social group would be ranked far lower. This may be due to the Judeo-Christian culture—"the fallen state of man"—or it may be simply that tragedy, with its inherent conflicts and appeals to the darker sides of human experience, is more moving (and easier to write well) than comedy. What may be harder to prove is that we rank tragedy above comedy because it reveals some basic truth about humanity.

Aldiss's short definition of science fiction is "Hubsis clobbered by nemesis." Granted a bit of poetic license for brevity and a bit more for levity, the phrase nevertheless suggests that humanity's attempt to understand the universe is doomed to failure and will be punished. Scientists them-

selves may have doubts along the lines of J. B. S. Haldane's suspicion "that the universe is not only queerer than we imagine, but queerer than we can imagine," but none of them suggest that the search is motivated by overweening pride or anticipate divine punishment, and some of Aldiss's own stories (the *Helliconia* trilogy in particular) exalt an organized search for understanding.

Trillion Year Spree notes that "Wells, escaping from the horrors of a lower-class Victorian environment, saw the hope that science offered of a better world. Those who argued against him, like Lewis and Huxley, saw only the eternal human condition, which science could not improve when regarded from the spiritual viewpoint. Wells also saw the human condition, and loathed it—hence his strong vein of pessimism—but he believed it was malleable, not eternally the same."

And later, "However much American science fiction may think of itself as—in the rather ridiculous phrase—'maintaining faith in the future,' the prevailing tint of *fin de siècle* is unmistakable." Essentially, the argument about the attitude one *ought* to adopt toward the future is conditioned by whether one thinks that human nature is fixed or capable of improvement. If it is fixed, then change can do nothing for it; indeed, change is likely to worsen the situation: utopia lies not in the future but the past (in the Garden of Eden or the Greek Golden Age), where humanity lived in harmony with its surroundings.

On the other hand, if one believes in evolution, as Wells did, one may well conclude that the human animal evolves like all the others, as environment selects certain characteristics as more successful. This sense of adaptability, of change in humanity as well as in its environment—indeed, as a consequence of the changes in its environment—has been the philosophical background for American SF.

Two stories illustrate this difference in philosophies: E. M. Forster's "The Machine Stops," published in 1909 as "a reaction to one of the earlier heavens of H. G. Wells," and John W. Campbell's "Twilight," published in *Astounding* in 1934 as the first of

his Don A. Stuart stories. Both deal with eschatological visions of humanity approaching extinction. The grub-like humans of "The Machine Stops" have come to depend upon the Machine for their every need, including information, and when it begins to fail they not only cannot repair it, they deny its growing errors. Finally it fails completely and everyone dies.

"Twilight," with a similar end-of-the-species situation and a similar dependence on machines, offers cities that are self-repairing; although most have been deserted for more than one hundred thousand years, they still work perfectly, waiting for a human to enter. Meanwhile humanity, though tremendously advanced, has wiped out all competitive life forms in a quest for efficiency and has lost its curiosity, the trait that makes the species human. The remnants of humanity are doomed, not to Forster's catastrophic extinction but to a slow and melancholy dwindling toward nothing. Then the time traveler to the future, before he departs, sets a machine the task of producing a curious machine. What seems at first a tragedy of the species becomes a story of human triumph, because it will have mattered that humanity existed and the machines, now human by definition, will fulfill the purpose of human existence by riddling out the secrets of the universe.

The essential distinction between the two stories is not that one has it right and the other has a wrong—that, certainly, will be determined only by events themselves—but that the authors have evaluated the basic elements of their stories differently. The defining characteristic of humanity, Forster says, is its corruptibility; given the opportunity to have its work done for it, humanity will lose its judgment, its heart, its "soul." The defining characteristic of humanity, Campbell says, is its curiosity, its propensity for asking questions such as what and how and why, and, though this may be lost, the important issue is the curiosity (the entire enterprise of science)—more important than the species in which it developed.

Further, Forster defines the machine as something that will make you dependent upon it and once

you lose your ability to exist without it will break down. Campbell defines a machine as something that does not need, theoretically, ever to break down; unlike fallible and aging flesh, machines can be made self-repairing. They can continue functioning forever.

Who is right, Forster or Campbell? The answer rests in whether one is born a pessimist or an optimist, or even in one's mood when one reads the story. Certainly the human species looks corruptible much of the time, but occasionally it displays an incorruptible honesty, even a nobility, and in a number of instances behaves as if curiosity is its most important characteristic. Humanity's experience with the malevolence of machines—as Forster says, they always break down—argues that Forster is right; but Campbell ultimately may prevail. In the dreams of our technically based society, machines shine like Campbell's eternal cities.

The answer, of course, is that neither and both are right. Aldiss refers to "the two poles of modern fantasy. . . . At one pole wait Wells and his honourable predecessors such as Swift; at the other, Burroughs and the commercial producers, such as Otis Adelbert Kline, and the weirdies, and horror merchants such as H. P. Lovecraft, and so all the way past Tolkien to today's non-stop fantasy worlders. . . ." The thinking pole and the dreaming pole, Aldiss clearly favors the thinking pole where "stand great figures, although it is easy to write badly. . . . At the dreaming pole stand no great figures . . . and it is difficult to write well." The implication is that both poles are necessary. So, it seems reasonable to suggest, are both streams of science fiction, the pessimistic literary strain and the optimistic technological strain. SF is the richer for having both; each functions as a critique of the other. The literary culture reminds us that people are not machines but stubborn, feeling, fragile human beings. The scientific culture reminds us that the story is not over, the future is still before us, and humanity may yet find a solution to, or at least an amelioration of, the human condition. ♦

Thallasogens III: The Sulfuric Acid Sea

Stephen L. Gillett

In a previous column I described how sulfur dioxide seas might occur. In our own System, Jupiter's moon Io shows that sulfur can end up concentrated at the surface of a world, and if Io were just a bit bigger (and a bit warmer), liquid sulfur dioxide could exist right at the surface. SO_2 occurs on Io now, but only in the subsurface, where it helps drive volcanic eruptions in much the same way as does water on Earth.

But SO_2 isn't the only possible sulfur-containing thallasogen. Another is sulfuric acid, H_2SO_4 .

Seas of sulfuric acid? That sounds completely preposterous. Sulfuric acid not only dissolves most everything in sight, it reacts with most everything in sight.

But on second glance the idea isn't quite so silly. Sulfuric acid is a lot like water: it's highly polar and hydrogen bonded, it has a high boiling point (about 337°C), and it has long range of temperatures over which it's liquid—over three times water's.

How might such a world form? Well, just as with the SO_2 planet, we start with a world whose surface is sulfur-rich. All its other volatiles—the other compounds and elements with low boiling points, such as methane, hydrogen, water, nitrogen, and so on—got boiled out by volcanism and lost from the atmosphere over geologic time. Only sulfur, the heaviest of the lot, was left behind.

This world, though, started out with a lot more oxygen than the SO_2

world. What difference might that make? Well, consider a planet that started out relatively Earthlike, with a lot of water, but intense photodissociation by ultraviolet (UV) light in the outer atmosphere split up the water vapor, so that the hydrogen escaped to space but the oxygen was left behind. How might this happen? Perhaps this planet orbits a hot, type F star, which puts out much more UV than the Sun. So instead of losing water as water, as happened to Io, the planet lost just its hydrogen while its oxygen was left behind.

Then what would happen? The oxygen would sooner or later oxidize all the sulfur, not just to sulfur dioxide, but all the way to SO_3 , sulfur trioxide. That would then react with any remaining water to form H_2SO_4 , sulfuric acid.

In fact, we do have a partial Solar System analog of this scenario: the clouds of Venus. They're made of droplets of sulfuric acid. As Venus lost its water through photodissociation, lots of oxygen was left behind, and it oxidized sulfur to the point that sulfuric acid finally formed, just as I described above. Being bound up into H_2SO_4 droplets also preserves Venus's last smidgen of water from photodissociation. As this would also be true on a planet with H_2SO_4 oceans, we wouldn't lose quite all the hydrogen.

Of course, H_2SO_4 droplets in Venus's clouds are a far cry from having an H_2SO_4 ocean. But perhaps if Venus had started out cooler, had

been less rich in CO_2 , and had been *much* richer in sulfur, it might have sulfuric seas today, too.

Obviously, the surface minerals on a planet where liquid sulfuric acid runs like water will be very different from Earth. Chemical weathering will be intense! Sulfuric acid reacts with most common minerals, breaking down their structures and extracting metal ions from them.

Surprisingly, we actually have an Earthly analog for such weathering from hot springs deposits. Most terrestrial hot springs contain dissolved sulfur compounds, which oxidize into H_2SO_4 as they encounter oxygen near the surface. And the acidic waters then attack the rocks around them.

So we can get an idea of what the surface of an H_2SO_4 planet might be like by looking at hot-spring minerals. As you might guess, only a few of the common minerals can resist such an acidic environment. Quartz (the common, stable form of crystalline silica, SiO_2) is one. Other common minerals, though, such as feldspars, crumble away. In fact they get changed into clay minerals—certain of which are stable, and which make up the cruddy, clayey or muddy material that's so ubiquitous in hot-springs alteration. The individual crystals are so small that the material has a clay texture. (Many Earthly ore deposits, by the way, are found in and around such altered rocks.)

Other oxides besides quartz, which are rare minerals on Earth, might also

be stable, including corundum (aluminum oxide, Al_2O_3). (The gem forms of corundum are more famous: sapphire and ruby.) Certain sulfates—salts of sulfuric acid—will also be stable, and maybe a few other salts. (Not sodium chloride itself, though: the chloride in it reacts with H_2SO_4 to give HCl , hydrochloric acid.) But overall, the very rocks themselves will hardly be Earthlike.

There will be no calcium carbonate (limestone) either. Carbonates react with acid to give carbon dioxide. In fact, the standard field test for limestone is to drip acid on a rock and see if it fizzes. So, all the CO_2 will go back into the atmosphere, which could make for an awkward greenhouse effect—as we already saw with Venus.

This vitriolic sea will also be highly "salty": it will have dissolved lots of metal ions out, to the point that nothing else can dissolve. In fact, sulfates will probably precipitate out, the way salts precipitate from extremely concentrated H_2O brines on Earth such as the Great Salt Lake or the Dead Sea.

But even if some minerals could survive, could anything organic survive? Sulfuric acid reacts as enthusiastically with many organic compounds as it does with most minerals. For one thing, it dehydrates sugars to carbon and water: a standard lab demonstration is dripping H_2SO_4 onto a sugar cube. The cube crumbles into black carbon while steam wafts off from the heat of the reaction. It also breaks down many organic acids: another Organic 101 demo is breaking down formic acid (HCOOH) into water and carbon monoxide by dripping sulfuric acid into a formic acid solution.

Still, H_2SO_4 doesn't react with all organic compounds. For example, alkanes (straight-chain hydrocarbons), like those in gasoline and natural gas, just bubble right through. (The oil biz uses this to purify them, by the way.) It ionizes other organic compounds by adding a proton (hydrogen nucleus), but doesn't break them up. So this just says an alien biochemistry will need different build-

ing-block compounds. It doesn't say it's impossible.

And even if some system of organic compounds won't work, there is another interesting possibility: silicones. Of course, this class of compounds is much more famous for high-performance lubricants—not to mention starlets' bosoms. But in fact they may be just the thing for a sulfuric acid environment: they're fairly stable chemically, and yet have the variety and complexity needed to be the basis of a biochemistry.

Silicones have a backbone made of alternating silicon and oxygen atoms:



which looks just like the backbone in many silicate minerals—in pyroxenes, to be exact. (Silicates are the compounds of silicon, oxygen, and metals that make up nearly all rocks.) Unlike silicates, though, silicones are not known to occur naturally (so far, anyway).

Now, instead of the metal atoms stuck between the silicon-oxygen chains that silicates have, silicones have organic (carbon-hydrogen-oxygen) groups chains stuck onto the silicones, like this for example:



where the R's and R's are various organic side chains, such as methyl ($-\text{CH}_3$), phenyl (C_6H_5), and so on. These groups need not be all the same; and for biochemicals, they certainly won't be, either. That's what gives them the variety and complexity—the information-storage capability—that may make silicones capable of serving as the basis of life.

H. Beam Piper's *Uller Uprising* proposed a silicone-based biochemistry, but the chemistry was wrong. The story suggested that silicones were favored evolutionarily because the planet was unusually silica-rich, but it would be hard to find a planet

richer in silicon than the Earth itself! It's the second most abundant element in Earth's crust, after oxygen.

In fact, silicones are very stable under the usual Earth-type conditions. To break them up—and keep them broken up—requires pretty rigorous chemical conditions. But as we saw in our survey of hot-spring deposits, "rigorous chemical conditions" is a good description of a sulfuric acid environment. H_2SO_4 is capable of breaking up silicate minerals, and under such conditions silicones may have a chance of forming out of the debris.

As we saw, too, the sulfuric-acid planet will also be a highly oxidized planet. So, if some organism evolved oxygen-releasing photosynthesis, the atmosphere could accumulate free oxygen. Sulfuric acid is hardly going to burn! This is completely different from the SO_2 case, in which free oxygen can't accumulate. Maybe, therefore, something like the highly oxygen-rich atmosphere of Earth could evolve, to support complex, multicellular organisms like Earthly metazoans.

But even if intelligent life arises, it'll have big problems with technology. What's it going to do for metal? Most metals react spectacularly with sulfuric acid. And even though a few noble metals—gold, platinum, a handful of others—don't react, they're rare and not very strong anyway. Try making a plow or a spear out of gold! (The noble metals are good electrical conductors. Maybe the intelligent beings could develop an electrochemical technology, using ceramics for vessels. Without iron and copper, though, building massive generators will be difficult, so generating the electricity is likely to be a problem.)

So, any intelligent beings on the sulfuric-acid planet are likely to be stuck there forever. As we've seen before, such environmental quirks may contribute to the Fermi Paradox. Maybe life is common, and even intelligent life is not rare—but most intelligent life isn't able to develop spacefaring technology. ♦

Tomorrow's Books

June 1993 Releases



Compiled by Susan C. Stone
and Bill Fawcett

Isaac Asimov (writing as Paul French): *Lucky Starr Book 3* Spectra SF, pb reiss, 288 pp, \$4.99. Omnibus edition containing: *Lucky Starr and the Moons of Jupiter* and *Lucky Starr and the Rings of Saturn*

Robin W. Bailey: *Brothers of the Dragon* Roc Fantasy, pb orig, 320 pp, \$4.99. The first novel in a new epic trilogy of magic, murder, and martial arts. Two brothers discover a passage behind a waterfall that leads into the alternate world of Palenon, where dragons patrol the skies and unicorns are deadly.

Margaret Ball: *Changewater* Baen Fantasy, pb orig, 304 pp, \$4.99. Tamai, one of the most powerful magicians of Gandhara, sought help for her people in the outer world and found it. But the British demand a high price for their protection. Tamai will guide them into the demon-infested empire of Chin, but first she must divest them of their dangerous disbelief in demons.

Margaret Ball: *Flamekeeper* Baen Fantasy, pb reiss, 384 pp, \$4.99. Tamai, a young magician, seeks beyond the Hindu Kush for help for her people. There she meets an English gentlewoman, and their alliance releases the most powerful magic the world has ever seen.

Margaret Ball: *The Shadow Gate* Baen Fantasy, pb reiss, 352 pp, \$4.95.

Historical fantasy with the action moving between Texas and Elven Brittany.

Maya Kaathryn Bohnhoff: *Tammy* Baen Fantasy, pb orig, 416 pp, \$4.99. Sequel to *The Meri*. A hundred years ago Tammy was Called to the sea to become one with the Meri and become her god's aspect on earth. Now, another girl has come to take her place, leaving Tammy free for her next mission—to restore women to their proper place in the world of the Men.

Maya Kaathryn Bohnhoff: *The Meri* Baen Fantasy, pb reiss, 288 pp, \$4.99. A woman is Called to assume magical power in a world where men rule, and resent her Meri-given gifts.

Marion Zimmer Bradley, editor: *Severed and Sorceress X* Daw Fantasy, pb orig. An anthology of stories about women of power—whether trained in the ways of the warrior, or in sorcery. Stories by Mercedes Lackey, Diana Paxson, Deborah Wheeler, and others.

David Brin: *Glory Season* Spectra SF, hc, 576 pp, \$21.95. Long ago the Founding Mothers set out to reforge human destiny through cloning, to create a pastoral world. Now the variant (non-clone) girl Mala is ready to make a place for herself, and her voyage of self-discovery will transform both her self, and her world.

Michael Cadnum: *Saint Peter's Wolf* Zebra Horror, 1st time in pb, 432 pp, \$4.99. Art collector Benjamin Byrd is mesmerized by the startling artifact he recently added to his collection: a set of

fangs embedded in silver. Soon his transformation accelerates and he runs free, stalking human prey.

Ramsey Campbell: *The Count of Eleven* Tor Horror, 1st time in pb, 416 pp, \$4.99. The story of a man who has terrible luck after breaking a chain letter, and sets out to kill the other people on the chain to change his luck.

Ramsey Campbell: *Strange Things and Stranger Places* Tor Horror, hc, 256 pp, \$18.95. Two novellas and eight shorter works, ranging from hallucinatory horrors of an evil side-show mirror maze, through forbidden castle ruins where dark games become deadly reality.

Jeffrey A. Carver: *Dragon Rigger* Tor SF, hc, 416 pp, \$22.95. Deep space adventure in the Star Rigger universe. A star-rigger enters the hyperspace of the Flux, and is caught up in an age-old dragon war.

C. J. Cherryh: *Heiburner* Questor SF, first time in pb, 400 pp, \$5.50. Sequel to *Heavy Time*. When Dekker is injured in a suspicious accident, his former partner Pollard is forced to investigate, and they are both trapped in a shadowy maze of deep space politics, where the rules change without warning . . . and their only defense is Earth's most secret weapon.

Greg Costikyan: *By the Sword: Magic of the Plains* Tor Fantasy, hc, 256 pp, \$18.95. A fantasy novel about a young barbarian who is the son of the god Mongocoo, and whose daring deeds are legion.

Key to Abbreviations

hc: hardcover, almost always an original publication.

pb orig: paperback original, not published previously in any other format.

pb reiss: paperback reissue, designating a title that was previously published in paperback but has been out of print.

pb rep: paperback reprint, designating a title that was previously published

in hardcover or trade paperback (sometimes expressed as **1st time in pb**).

tr pb: trade paperback, a format using pages larger than a paperback but generally smaller than a hardcover, with a flexible cover.



Roberta Gray: *The Sword and the Lion* DAW Fantasy, pb orig, 492 pp, \$4.99. A classical epic fantasy set in a land reminiscent of Bronze Age Greece, chronicling the conquest of a legendary city.

John DeChancie & David Bischoff: *Dr. Dimension* Roc SF, pb orig, 288 pp, \$4.99. Dr. D. was certain he was on the brink of building a working space-time machine, and his arch-rival was determined to see that he failed—or else steal his invention. But neither of them planned on a crate of future technology that would set them adrift in spacetime, in the middle of an intergalactic war.

Charles de Lint: *Spiritwalk* Tor Fantasy, first time in pb, 384 pp, \$4.99. The long-awaited sequel to *Moonheart*. A return to Tamson House in modern Ottawa, with its garden gateway into a mystical underworld which blends Celtic and Native American myths and legends.

Troy Denning: *The Obsidian Oracle* TSR Fantasy, pb orig, 352 pp, \$4.50. Volume Four of the DARK SUN™ Prism Pentad. The nobleman Ages of Astades tracks King Tithian of Tyr across the Sea of Silt, hoping to beat him to the artifact that could give Tithian the power of a sorcerer-king. The future of Athas lies in the balance.

Gordon R. Dickson: *The Dragon on the Border* Ace Fantasy, 1st time in pb, 400 pp, \$5.50. Sequel to *The Dragon and The George* and *The Dragon Knight*. Sir James, the Dragon Knight, must find a way to fight the Hollow Men—spirits of the dead, in empty suits of armor, with weapons that are all too real.

Gordon R. Dickson: *Lost Dorsai: The New Dorsai Companion* Tor SF, pb orig, 288 pp, \$4.99. A concordance listing where characters were first mentioned in the Childe Cycle, with entries describing events, relationships between

characters, and the history of the Cycle. Also includes the novella "Lost Dorsai" and the short story "Warrior."

Debra Doyle & James D. Macdonald: *Starpilot's Grave* Tor SF, pb orig, 448 pp, \$4.50. Sequel to *The Price of the Stars*. When Beka discovers that the Magdroids are poised to attack, her piloting skills are all that stand between the Republic and annihilation. Then her hyperspace engine fails, leaving her drifting and desperate to avoid what free spacers call a Starpilot's Grave.

Debra Doyle & James D. Macdonald: *The Price of the Stars* Tor SF, pb reiss, 448 pp, \$4.50. The centuries-long war between the human Republic and the Mageworlds has been over for thirty years. But now an assassination imperils the peace, and the victim's daughter finds herself in the thick of Galactic intrigue.

David Drake: *The Military Dimension* Baen SF, pb reiss, 288 pp, \$4.50. A collection of military SF short stories.

David Drake & S. M. Stirling: *The General #3: The Anvil* Baen SF, pb orig, 320 pp, \$4.99. Loyal and victorious General Raj Whitehall has always been ready to pay any price for final victory. But now his emperor's half-mad jealousy gives Raj no choice but to revolt, or face death by torture.

David Drake & S. M. Stirling: *The General #1: The Forge* Baen SF, pb reiss, 336 pp, \$4.95. A young military officer discovers—or is discovered by—an artifact of the fallen galactic civilization: a sentient battle computer. Its mission, and now his, is to go forth and conquer the planet, and then reconquer the stars.

David Drake & S. M. Stirling: *The General #2: The Hammer* Baen SF, pb reiss, 320 pp, \$4.99. Raj Whitehall must overcome the muskets and sabers of his barbarian opponents and risk accusations of treason from the emperor's court.

Kate Elliott: *The Sword of Heaven #2: His Conquering Sword* DAW SF, pb orig, 496 pp, \$5.99. As the jaran tribes prepare to besiege the royal city of Karkand, Charles Soerensen, leader of the failed rebellion against the alien Chaphili Empire, has come to Rhui to reclaim his sister and begin his own battle against a galactic Empire that was strong before humans learned to walk erect.

Kate Elliott: *The Sword of Heaven #1: An Earthly Crown* DAW SF, pb reiss, 592 pp, \$5.99. The first of a two-part sequel to *Jaran*. Earth-born Tess and her jaran husband lead his nomadic people on a campaign of conquest across the world of Rhui, while Tess's brother tries to win her aid in interstellar rebellion.

Kate Elliott: *Jaran* DAW SF, pb reiss, \$4.99. Tess came to Rhui to flee political responsibility, but when alien conquerors tamper with her new world, she must act to save the folk who sheltered her.

Robert C. Fleet: *White Horse, Dark Dragon* Ace Fantasy, pb orig, 224 pp, \$4.50. Jim Marlow came to Central Europe to study the environmental impact of a planned mining operation. But hidden in the mountains of Karstun is a myth come to life that will change the lives of all who enter its domain.

Alan Dean Foster: *The False Mirror* Del Rey SF, 1st time in pb, 320 pp, \$5.99. Book #2 of *The Damned*. After millennia, war still rages between the Amplifier and the alien/Human alliance known as the Weave. And when Weave forces capture an enemy agent, they discover that the Amplifier's new secret weapon could turn the entire galaxy against the Human race.

David Gemmell: *Knights of Dark Renown* Del Rey Fantasy, pb orig, 304 pp, \$4.99. When the legendary knights



of the Gabala vanished through a demon-haunted gateway between worlds, only one of them, Manannan, stayed behind. Now murder and black magic beset the land, and Manannan must venture beyond the dreaded gate to bring back his vanished companions.

Roland J. Green: *The Painful Field* Roc SF, pb orig, 384 pp, \$4.99. The crew of the starcruiser *Shenandoah* is essential to maintaining the peace on the world of Linak'h, but someone wants to use them as a catalyst for war, beginning a campaign of terrorism that could overturn the balance of power between human and alien.

Martin H. Greenberg, Richard Gilliam, and Ed Kramer, editors: *Confederacy of the Dead* Roc Horror, tr pb orig, 480 pp, \$12.00. An all-original anthology of 25 stories about the Civil War, by bestselling masters of our ghostly past—authors of science fiction, dark fantasy, and horror.

Joe Haldeman: *Worlds Enough and Time* Avon SF, 1st time in pb, 336 pp, \$4.99. The long-awaited conclusion to a series of novels, with their homeworld in ruins following nuclear devastation, 10,000 colonists set out for the stars, and face mysterious deaths, sabotage, and the end—or a new beginning—for humankind.

Joe Haldeman: *Star Trek: World Without End* Bantam SF, pb reiss, 160 pp, \$4.99. While Kirk is held captive on an alien ship/planetoid, facing a nightmare image from humanity's past, Spock must struggle to free the *Enterprise* from the alien's power draining snare.

Tom Holt: *Flying Dutch* Ace Fantasy, 1st time in pb, 256 pp, \$4.50. This funny fantasy novel features Dutch sea captain Vanderdecker and his crew, who accidentally took an immortality elixir 400 years ago. Now there's an accountant

hot on the captain's trail, desperate to deal with a case of astronomical interest.

Dean Ing: *Blood of Eagles* Tor Suspense, 288 pp, \$3.95. A thriller that begins in Alkunia with gold stolen by the Nazis, and ends in California with a son of an Albanian freedom fighter fighting for the same prize... and his life.

William W. Johnstone: *Bats* Zebra Horror, pb orig, 352 pp, \$4.50. A huge swarm of vampire bats suddenly develops a taste for human blood.

David Lee Jones: *Zeus and Co.* Avon Fantasy, pb orig, 288 pp, \$4.99. The trouble started when Cyrus Major discovered Euterpe, the Greek Muse of lyric poetry, imprisoned on a hard drive. The heroic hacker is a goner if he can't dodge industrial spies, the FBI, and thunderbolts from a ticked off Zeus, to send him in the name of mythic love.

Gwyneth Jones: *White Queen* Tor SF, 1st US pub, hc, 320 pp, \$19.95. When humanoid aliens land on Earth early in the 21st century, the world changes in disturbing ways.

William H. Keith: *Warstrider #2: Rebellion* Avon SF, pb orig, 352 pp, \$4.99. Devis Cameron, hero of the Xenophobe War, must choose between betraying his masters or his principles. For humankind's salvation lies in an impossible alliance of men, monsters, and machines.

Yoji Kondo, editor: *Requiem: New Collected Works by Robert A. Heinlein and Tributes to the Grand Master* Tor SF, 1st tr pb, 352 pp, \$12.95. A collection of new and uncollected works by Heinlein, along with other writings and speeches. Introduction by Virginia Heinlein, and tributes by Tom Clancy, Arthur C. Clarke, Gordon R. Dickson, Spider Robinson, Robert Silverberg, and others.

Robert D. Lee: *The Keeper* Pinnacle Horror, pb orig, 224 pp, \$4.50. Judy

MacAuliffe has always wanted to work in a circus, and hopes Horst and Hans Van Ziegler, members of a once great circus dynasty, can help her. But approaching them is the gravest mistake of her life...

Morgan Llywelyn: *The Elementals* Tor Fantasy, hc, 304 pp, \$21.95. An environmental fantasy novel which sweeps from historical Atlantis and the flood, to 21st-century America.

Ian McDonald: *The Broken Land* Spectra SF, pb, 352 pp, \$5.99. In Earth's far future, when the Emperor's troops discover two rebel soldiers being hidden by a local sympathizer, the streets of a once peaceful village run with blood. And, in the midst of the fighting, young Mathembe Felle is cast off on an epic journey through her tragic, beautiful land—a land divided against itself.

Alex McDonough: *Dragon's Claw* Ace SF, pb orig, 176 pp, \$4.99. Sequel to *Dragon's Eye*. In this time-travel adventure, Scorpio discovers that the vVos, an ancient, evil race, are the power behind the Hunters who once dominated his planet Terrapin. Scorpio must travel to the vVos homeworld to find a way to free his people from vVos slavery.

Robin McKinley: *Deerskin* Ace Fantasy, hc, 320 pp, \$17.95. Fleeing her father's wrath and lust, Princess Issar takes her loyal dog Ash as her sole companion, unlocks a door onto a world of magic, and discovers adventure beyond her wildest dreams. A sophisticated fairy tale for adults.

V. E. Mitchell: *Star Trek #65: Windows on a Lost World* Pocket Books, pb orig, 288 pp, \$5.50. When a landing party from the *Enterprise* finds strange devices, like windows, in the ruins of an ancient civilization, Kirk, Chekov, and two security guards are trapped in the



alien environment beyond. Spock must unravel the window's ancient mysteries before they are lost forever.

Recent Monahan: *The Book of Common Dread* St. Martin's Press, Inc. 336 pp., \$19.95. Vincent DeVillbiss is a thoroughly modern vampire who must find a way to destroy an ancient cuneiform scroll before its apocalyptic powers are turned against him.

Larry Niven, editor: *The Magic May Return* Ace Fantasy, pb reiss, 256 pp., \$4.99. In this sequel to *The Magic Goes Away*, Larry Niven invited Poul Anderson, Steven Barnes, Mildred Downey Broxon, and Dean Ing into his world to uncover forgotten places of power and offer hope that *The Magic May Return*.

Andre Norton & A. C. Crispin: *Gryphon's Eyrie* Tor SF, pb, 256 pp., \$4.99. The conclusion of the Gryphon trilogy. Traces of ancient forces linger in Kerovan's spirit, tormenting him. Once again, he feels the irresistible call of his blood—this time summoning him to the final battle of Light against Dark.

Charles Pellegrino: *Flying to Valhalla* Avon/Novel/Morrow SF, Inc. \$22.00. As Earth's relativistic spacecraft *Valhalla* approaches First Contact with an alien race on Alpha Centauri A-4, the masters of Earth realize that the man who controls the mission, and the destiny of both worlds, is quite possibly insane.

Kevin Randel: *Galactic MI* Ace SF, pb orig, 208 pp., \$4.50. Galactic MI are soldiers, scientists, and high-tech spies—all expert infiltrators whose top-secret missions take them undercover on alien worlds before official First Contact. This time, Galactic MI explores a planet with a "perfect" society. But why would a planet with no crime have so many police?

Mike Resnick: *Prophet* Ace SF, pb orig, 256 pp., \$4.99. Book 3 of *The Ora-*

cile Trilogy. Some people believe Penelope Bailey's powers can bend events and people to her will. They have tried twice to have her killed, and each time she barely escaped the assassin, Iceman. But this time she wants to be found.

Michelle Sagara: *Lady of Mercy (The Sundered #3)* Del Rey Fantasy, pb orig, 352 pp., \$4.99. Awakened from centuries of enchanted sleep, Erin, Sanblorn, *The Lady of Mercy*, resumes Light's battle against the Dark Empire, and her own struggle against her love for her sworn enemy, the Dark Lord. Her task—to free the land, its people, and herself.

R. A. Salvatore: *The Fallen Fortress* TSR Fantasy, pb orig, 320 pp., \$4.95. Volume Four of the FORGOTTEN REALMS® Clenic Quintet. A young priest, Cadderly, and his companions embark on a journey to confront the fiends of Castle Trinity. When neither the journey nor the battle goes as easily as planned, Cadderly must come to terms with his past.

Charles Sheffield: *Cold as Ice* Tor SF, 1st time in pb, 384 pp., \$4.99. Twenty-five years ago there was interplanetary war in the solar system. Nine billion people were killed, some of the deadly weapons still exist, and the rivalries that led to the war remain.

Lucius Shepard: *Kalimantan* Tor SF, 1st time in pb, 224 pp., \$3.99. Deep in the lush green jungles of Borneo, MacKinnon discovers a powerful native drug that dissolves the border between reality and a strange realm of visions, spirits, and a lost alien civilization.

Robert Silverberg, editor: *Murasaki* Spectra SF, 1st time in pb, 304 pp., \$5.99. Under Robert Silverberg's editorship, Nebula Award winners Poul Anderson, Greg Bear, Gregory Benford, David Brin, Nancy Kress, and Frederick Pohl worked together to create the worlds and story of this six-part novel.

Guy N. Smith: *Witch Spell* Zebra Horror, pb orig, 288 pp., \$4.50. When 13-year-old Brenda Wheeler is sent by her white witch mother to an English boarding school, she begins some special lessons in using her supernatural gift. For, as she comes of age, her black witch father has begun, secretly, to lead her down his own dark path.

Judith Tarr: *The Hound and The Falcon* Tor/Orb Fantasy, tr pb reiss, 464 pp., \$14.95. An omnibus edition of Judith Tarr's classic historical fantasy series: *The Isle of Glass*, *The Golden Horn*, and *The Hounds of God*.

Sheri S. Tepper (writing as A.J. Orde): *Death and the Dog Walker* Fawcett Mystery, pb orig, \$3.99. In the second in a series of suburban mysteries featuring an antiques dealer/interior decorator/sleuth, Jason Lynx discovers a dead man while walking his dog in a Denver park, and is fascinated by the eerily lifelike arrangement of the body.

Harry Turtledove: *Departures* Del Rey SF, pb orig, 366 pp., \$4.99. A collection of Harry Turtledove's alternate-history SF and fantasy stories.

David Weber: *The Honor of the Queen* Baen SF, pb orig, 416 pp., \$5.99. Sequel to *On Basilisk Station*. Honor Harrington would prefer to withdraw when she discovers that, on the planet where she's been assigned by Her Majesty's Foreign Office, women are without rank or rights. But when the world's frigid sister planet attacks, Honor must stay and prevail... for the honor of the Queen.

Robert Wells: *Shadowman: Stripper Assassin* Roc/FASA Fantasy, pb orig, 288 pp., \$4.99. Stripper, a deadly Asian assassin and kick-artist, is turning Philadelphia into a slaughterhouse. Set in the world of the *Shadowman* series.

Looking Forward:

Dr. Dimension

by John DeChance
and David Bischoff

Coming in June 1993 from Roc Books

Introduction by Bill Fawcett

Dr. Demetrios Demopoulos labored long and hard to build a spacetime machine, and all he had to show for it was a bunch of burned-out parts strewn around his laboratory—a source of great frustration to his graduate assistant, the voluptuous Dr. Vivian Vernon, and pleasure to his archrival, Geoffrey Wussman.

Then one day a mysterious box full of astonishing gadgets arrived at Dr. D.'s lab. This turned out to be just what he needed to get his spacetime machine to work—but of course nobody knew it would work until after it had whisked Dr. D., Vivian, and three of their colleagues off to somewhere, and somewhen, far, far away.

This excerpt is taken from the point in the story when they first find themselves in space—and in the middle of a war

Wussman pouted. "Demetrios, please just let me out of this thing."

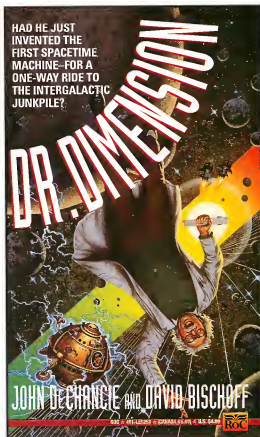
"Can't do that, Geoffrey, old bean. If we open the hatch all the air will rush out, and we'll suffocate."

"Nonsense."

"Geoffrey, just look out the viewport."

"Oh, very well." Geoffrey squeezed his way toward the pilot's station. Stading on tiptoes, he looked out.

"Oh, my God! Demetrios, we're in outer space!"



Cover art by David Mattingly

"Hundreds, possibly thousands of light-years from Earth. Wait a minute, didn't I just say that a second ago?" In a moment a queasy-looking Dr. Vivian Vernon climbed up through the hatchway.

"What in the world is going on?"

"Hey, Viv. Join the party."

"What happened?"

"Vivian, come look!"

"Geoffrey, what is it?"

"You have to see to believe, Vivian."

Vivian peered over Demetrios's head and out the viewport.

"Oh, my God . . ."

Demetrios said, "You don't believe in God, Viv. Remember? And you didn't believe in my spacetime ship either. Well, here we be out in the middle of space. And lordy, lordy, there be the firmament of heaven."

Vivian swallowed hard. "Where are we?"

"Uh, that is a small problem. We didn't have time to find out how the navigation gear works."

"You mean we're lost?"

Demetrios smiled. "Uh, let's not use the I word just yet. Let's just say it might take us a bit of time to get back to Earth. But then, we're in a spacetime machine—and what's time to a spacetime machine, eh?"

"Or space, for that matter," Diane chimed in.

"Oh, my God," said Dr. Vernon. "Stuck with you people in a ship in the middle of . . . of nowhere. I think I'm going to faint."

A fierce lightning flash flooded through the viewport. Suddenly the craft began to shake, knocking Vernon and Wussman down. Demetrios looked out the viewport but nothing was visible save the unwinking multicolored splendor of the stars. The ship did have a television viewer, which had yet to be tested. He snapped a few switches. A small screen on the console began to glow. Apparently the explosive jump through spacetime had not affected the miniature cinemas set into the hull, because an image was coming through on them right now.

A moving dot registered on the television screen. He increased magnification, and the outside cinemas adjusted their telescopic lenses to the proper focal length. Immediately, the image of something incredible resolved to crystal clarity. Demetrios was astonished at the sharpness of the photographic detail, in full color, no less.

It was some sort of gigantic ship, a dreadnought hanging in space like a Christmas tree ornament from hell, bristling with more spines than a sea urchin. Two particularly large pointy spines shot goutts of blue-green fire.

"Look at this," he said to Diane.

Diane looked, and her jaw dropped. "What in the world is it?"

"An alien space vessel, and it's engaged in combat with something farther away. Yes, another blip on the scanner. This one is headed our way, though. It if gets too close—"

A tremendous flash lit up the area of space around the spacetime ship.

Inside the ship, the lights flickered and went out.

"Lights out!" said Dr. Demopoulos. "What a great name for a radio program. How about if we start it off with this screeching sound of a door opening?" SCREEEEEEEEEEEECH!

Somebody squealed in Vivian Vernon's voice. Then, like a supernal lightning bolt, another gigantic flash lit up the interior of the ship, fading quickly. Darkness returned with a vengeance, everyone now temporarily flash-blind.

"Damned scary, any way you cut it," said Troy Talbot. "Somebody goosed me!"

There was the sound of a slap and a resultant howl.

"Vivian, you hit me!" Wussman whined.

"Keep your hands off me and you won't get hit."

"I didn't touch you!"

"And I suppose you didn't have your paws all over me when we were hiding in the bathroom?"

"It was *tight* in there!"

A voice of reason cut through the darkness. "People, listen," said Demetrios. "I really think we should be doing something more constructive than waging the battle of the sexes at this particular moment. We're stuck millions of miles from home in the middle not only of space, but in the midst of what very well may be the most cataclysmic battle in the history of the universe. We'll need every ounce of calm, cool, calculated rationality that we can muster."

"Dr. D. is right," Talbot said. "What should we do, Doc?"

"Pray. If we get caught in the crossfire, we're dead. *I wanna go home!*" Demetrios burst into tears.

"Then this is the end," Professor Wussman said. He wrapped his beloved in a tender embrace. "Precious one, we may well have only seconds left in this life, our final chance for the intimate embrace you've promised me for so long. Come, my Isolde, kiss your Tristan and let us have our *Liebestod!*"

"Dr. Wussman, please," said Diane Derry. "I'm not your Isolde."

"Oh, sorry, Vivian, where are you? Vivian?"

"Geoffrey, darling."

"Keep your hands to yourself, Demetrios," Wussman said disgustedly.

"Boy, you know you're a loser when the homely ones start turning you down."

"Vivian?"

"I'm warning you, Geoffrey . . ."

"Vivian, darling, we—*umph!*"

"Can't say I didn't warn you."

"Oh, that sounded wicked," Demopoulos said. "What did you do to him, Viv?"

"Kneed him in the crotch."

Something hit the deck like a sack of potatoes.

Demetrios chuckled. "Geof, did you ever want to sing counter-tenor?"

Wussman's answer was a moan.

Vivian looked out the viewport. The battling dreadnought was now visible to the naked eye, growing ever larger and appearing all the more formidable in three dimensions. It was an immense artifact. Vivian was aghast.

"Oh, my God, look at that thing! Demetrios, you cobbed this damned crate together. What the hell do we do?"

"Hold your horses, Dr. Vernon. And your knees. First we have to do something about the lights."

Demetrios made his way along the curving bulkhead, feeling his way carefully along the nuts and bolts and wads of chewing gum (damn Talbot, anyway!), inching toward an access panel that he hoped was located where he thought it was.

"I don't know why the auxiliary lighting failed, but it could have something to do with those huge explosions. They might be releasing powerful pulses of electromagnetic energy, which would play havoc with the ship's electrical system. Ah, here we are, the circuit breakers."

Demetrios hit the button that opened the panel and began feeling inside for switches. For his trouble, he got a nasty shock.

"Φουκ!"

"Watch your filthy mouth," Vivian said coldly.

"I said it in Greek."

The lights came on to reveal a miserable Geoffrey Wussman doubled up on the deck, moaning piteously.

Talbot, standing at another panel, flicked more switches. "Circuit breakers're over here, Doc."

"Thanks, Talbot, you manually dexterous dope."

"Just trying to help."

"You could have told me where the damned things were. Never mind. Pardon me, pardon me, this is my stop."

Demopoulos sidestepped his way toward the pilot's station, inadvertently, although happily, brushing against Vivian's ample bosom.

"Oops, sorry, Viv."

"No, you're not, you wolf. You were probably the one that goosed me."

"Ah, you've fingered me at last. All right, battle stations!"

"This tub has armaments?" Vivian asked, disbelieving.

"We installed something that the instructions called weapons," Troy said. "Trouble is, not only don't we know how to shoot 'em, we don't even know what the heck they do."

"All right, let's try to get this ship away from the danger zone," Dr. Demopoulos said, frantically scanning the control board. "Um . . . um . . . yeah. Anybody have a suggestion?"

"Let's set up for another thrust," Diane said. "Just like the first."

"But we thrust—er, thrust along an unknown vector. We have to find out how to steer this damn thing, or we'll get completely lost."

"Doctor," Diane said gravely, "we're already completely lost. Let's get away from whatever those people are doing out there."

"If they're people. You have a point, Diane."

Even as he spoke, multiple flashes dazzled all within

the spacetime vessel. Seconds later, a shock wave slammed against the ship. Vivian and Troy were thrown to the deck on top of Wussman.

Demetrios stabbed a button and the steel shutter closed over the viewport.

"Those must be atomic explosions," Demopoulos said, rubbing his eyes. "Nothing else could produce that much radiation. If we were any closer, we'd fry."

"The radiation meters are registering dangerously high exposure as it is," Diane said.

"All the more reason for us to vamoose. Set up for another jump. Quick!"

Outside, as viewed by the telescopic lenses of the exterior cameras, the mighty space battle seemed to intensify. Now there were two mammoth starships, looking like nothing so much as huge, pregnant, leather-clad porcupines. They had approached each other and halted, and were now exchanging rainbows of projected power, slamming back and forth with mighty force beams. That the comparatively tiny spacetime ship had not yet been melted into slag was testimony to its luck; however, from all signs, time was not on the side of the spatiotemporonauts. The duking dreadnoughts displayed a profligacy of energy expenditure that made this particular neighborhood of outer space a high-risk area.

"Talbot, get off the floor. Man your station!"

"Dr. Vernon's on top of me."

"I've never cared for the missionary position either."

Demetrios said, turning about to look. "You lucky stiff."

"Only part of him is stiff," Vivian said, struggling to her feet.

"Sorry, ma'am, that's my pocketknife."

"Oh? I thought you were just glad to have me sitting on you."

Talbot, greatly abashed, got up to reveal what lay under him: the slightly squashed form of Dr. Geoffrey Wussman.

Demetrios got back to work, his hands moving furiously, aping Diane's. There were any number of buttons to push, instruments to recalibrate, switches to throw, and thingees to do whatsit to.

At last he said, "Are we ready, copilot?"

Diane said, "Yes, sir!"

"Ready, Engineer?"

"Yoi!"

"Engage the main gizmos."

Talbot asked, "You mean the electrogravitic thrusters?"

"Yeah, those."

"Engaged!"

The ship began to throb again, the pulsing sound mounting in intensity once more.

"All hands stand by for spatiotemporal displacement!" Demetrios announced. Then he suddenly grinned. "Hey, that sounds snazzy, doesn't it?"

"You sound just like Buck Rogers," Vivian jeered, "or any other character in the funny pages. Now, get us the hell out of here!" ♦

Looking Forward:

Wild Magic

by Angus Wells

Coming in June 1993 from Bantam Books



Introduction by Bill Faucett

Along with epic adventure and well-drawn characters, the *Godwars* trilogy also offers a real feeling of suspense. In this third volume of the series, two mad gods have been doomed to what was supposed to be eternal sleep—but the wizard Rhythmun has found a book that will awaken one of them. The result, if Rhythmun succeeds, will be literally earth-shattering.

In this excerpt from the middle of the novel, Prince Calandryll has fallen into his foe's trap while hurrying to stop the wizard. Calandryll's enchanted blade could easily destroy the four were-beasts that confront him, but the weapon was designed to battle a much more powerful enemy—striking one of the beasts would cause it to explode with such force that Calandryll himself would also be killed. But the prince is willing to give up his own life if he can also strike Rhythmun with that final blow.

Calandryll stared, scenting the odor of almonds mingling with the reek of the creatures, seeing the form of the Jesseryte imposed on the flickering shape of the uwagi,

Cover art by Kevin Iweddell

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one then the other, dreamlike, like the shifting, darting movements of a fish glimpsed through rippling, unlit water.

He braced himself, favoring his bruised leg, the straightsword extended, knowing beyond doubt what—*what!*—possessed the were-thing.

And Rhythamun chuckled and said, "A tidy trap, no? Use that blade and you die, leaving me the victory. Do not use it, and my pets rend you limb from limb. You've seen their work, I think—shall you enjoy that fate? No matter, for I take the day. The day and the Arcanum, both, with all the world to follow when I raise Tharn. And for you, suffering beyond your imagination."

The warlock laughed, or the uwagi laughed, for they both occupied the same temporal space. Calandryll snarled, not now unlike the ferocious growling of the were-beasts, for rage burned within him, and hatred, exiling all fear, all sorrow, leaving only wrath.

"Which do you choose?" Rhythamun asked. "The one death is, perhaps, swifter than the other, but whichever—your quest ends here. In a lonely place, with none to mark where you fall. Does that sit bitter, Calandryll den Karynth? Do you see now how foolish it has been to oppose me; to oppose Tharn's raising."

"No?"

It was a challenge and denial, together, and met with mocking laughter. He saw the armored shoulders of the Jesseryte, and the hulking width of the uwagi, shrug.

"No? How say you, no? What shall you do, save die? Die knowing your quest comes to naught, that I am victorious. That in time your allies shall die. The Kern and the Vanu woman, the upstart sorcerer who aids you—all of them! While I go on to raise my master and stand at his right hand, favored. And you? Your body shall lie here, given by your own sword or by my creations, while your spirit suffers tortures past comprehension. Yet, at least; though you shall find them soon enough." Again, the horrid laughter, confident and contemptuous. "Was it such a gift your feeble goddess gave you? It seems to me a curse now—the instrument of your death, if you so choose."

"Save I strike you," Calandryll roared. "What then, warlock? Dera set holy magic in this blade, and I think that do I plunge her power into that body you use, then your pneuma shall feel the blow."

The uwagi that was Rhythamun in his Jesseryte form howled horrible mirth. Slaver fell on Calandryll's face, distasteful, ignored as he waited, poised.

"You take lessons in sorcery, eh? Doubtless from the mage who came to your aid before. My pneuma, you say? You think to harm me within the aethyr? You pride yourself, boy. Think you a scant handful of lessons, a smattering of that lore I've studied down the ages, can aid you or harm me? I say you again, no! Strike and discover!"

Calandryll held back, his mind racing, delving frantically into all Ochen had told him, into all the lessons—few enough, Dera knew!—he had received. Aloud, he said, not sure whether he believed his own words, or merely looked to buy more time, "You send your animus

into this thing you made—you meld with it—so do I strike it, I strike you. What then, Rhythamun? Are you greater than the Younger Gods?"

"I am," said the shifting thing, with awful conviction. "Ere your blow can land, I shall be gone, and that blade your puking goddess blessed strikes the flesh of my creation—which shall be your destruction, and the ending of your quest, Tharn's blood, boy, you've seen what magic does to these things! You've lost, and all you've done comes to naught. So strike; or do I set them on you? It matters little to me."

"I think you are afraid," Calandryll said.

"Afraid?" The obscene laughter filled the clearing, howling off the trees. "I afraid? Strike, then, fool!"

"Aye!" Calandryll shouted, and sprang to the attack, the blade carving swift at the mocking face.

Calandryll was emptied of fear in that moment: the rage that gripped him left no space for any other emotion. He knew only that Rhythamun's animus dwelt in the uwagi, and hoped—trusted to Dera and all her kindred gods—that his blow should land ere the warlock might quit the body. That he would be consumed in the occult devastation was no longer a consideration, a matter of scant importance were he able to slay the sorcerer. Even if the blow did serve only to banish Rhythamun's pneuma to the aethyr it might still prove a victory—Pyrrhic, but what matter that, if Ochen, if the wazir-narimas of Anwar-teng, were able to hunt the warlock there? It seemed a small enough sacrifice, his life against the sorcerer's defeat: he put all his strength into the cut.

And saw, as if time slowed, as if he stepped aside, occult and corporeal existences divided and he became observer of his own actions, the blade swing down, true, at the cranium of the beast that was Rhythamun.

He saw rank terror glint started in the red eyes, triumph in the tawny Jesseryte orbs. Smelled fear sweat and almonds; heard mocking laughter. Saw the were-form flicker again, no longer possessed, but wholly uwagi; and knew he was defeated, that Rhythamun fled the body faster than his sword fell, and that as edge clove skull he was dead, the triumvirate broken, the quest doomed to failure.

The blade sang down its trajectory, sure as death, unstoppable, carving air that soon should be replaced by bone and brain, and then the explosion of opposed magicks. He saw his death draw remorselessly closer.

And a shape burst from the pines, fleet as flighted arrow, too fast his peripheral vision had chance to discern what moved. He saw the uwagi hurled aside, howled howling over, the straightsword crash against empty turf, driving deep, the wrath-filled force of the blow jarring his arms, his shoulders. He snatched it free, hearing the laughter falter, lost under the uwagi's scream as the were-beast was hauled upright, the hands that gripped its throat tugging back the neck as a knee drove against the spine. Time resumed its natural passage then, as the creature was bent, arched over until the horrid sound of snapping bone announced the breaking of its spine. Its scream pitched shrill and abruptly died. Calandryll saw it lifted and flung across the clearing, tumbling three of

its kindred monsters like skittles, and then he was grabbed, spun round, and hurled toward the tenuous safety of the trees.

He landed on his face, windied and momentarily stunned, pine needles sharp, pungent, against his mouth. Bewildered, unsteady, he pushed up on hands and knees, retrieved his sword, and clambered to his feet, staggering, dizzy, back to the clearing's edge. And gasped in naked amazement as a second were-beast was felled.

Cennaire?

He wondered momentarily if he dreamed—how could it be Cennaire who stood there?

Yet it was; like a wildcat, furious, moving with a speed, a strength, he could scarce believe, ducking beneath a reaching paw to clutch the arm and snap it, to crush the windpipe and drive a fist against the gaping jaws so hard, so savage, the bones crumpled, lifting the bulky creature to hurl the thing as though it were no more than a weightless rag doll, at its confused companions.

Two of the monsters lay dead then. Others yammered rage and bewilderment. One stood, arms raised, its form flickering, possessed by Rhythmun, the scent of almonds growing stronger.

Calandryll shouted, "Cennaire!" and began to move out of the timber.

The woman shouted, "No, flee! I can hold them!"

And light, eye-searing, burst from the outthrust hands of the thing that was owned by the sorcerer. It struck Cennaire, smashing her down, blackening the grass where she stood as if foul poison sullied the night-dark green. Calandryll thought her surely dead then, but she rose, shaking long hair from her face, and moved once more toward the uwagi.

Calandryll raised his blade, unthinking now, intent only on defending the woman. Four of the uwagi stood before her, while the fifth again raised its arms, though now the eyes looked not at Cennaire, but at where Calandryll came out from the trees.

"In Burash's name!" Cennaire screamed. "Do you get yourself to safety! Leave me, for the gods' sake! For your sake!"

Calandryll shouted, "No," and saw fresh light, bright beyond color, beyond belief, soul-searing, lance from the Rhythmun-uwagi.

It seemed then that an ax collapsed his chest, a garrote wound about his throat. It seemed his eyes melted in their sockets, that all his limbs shattered. He did not know he fell, for a while knew only a darkness crimsoned by agony, as if all his organs burst and flooded his body with ruptured blood, and a dreadful tugging, like a cord drawn tight about his soul, about his spirit, seeking to drag his pneuma out into the aethyr, into a limbo of eternal suffering. Not knowing how he did it, he once more mouthed the gramaryes Ochen had taught him, warding his animus against the occult attack, careless of his body, concerned only that Rhythmun not take his soul. Then he became aware that his mouth clogged, gagging on turf and needles, which mattered little, for he was choking and burning. The scent of almonds was pungent in his nostrils and he knew that he was dying, was killed.

And then he was lifted again and some measure of sense returned, enough that he realized Cennaire held him, her hair soft on his cheek, her arms incredibly strong, carrying him into the trees even as the uwagi howled and all around them the forest flamed, wracked by sorcery.

Trees toppled, felled by the blasts of Rhythmun's sorilege; the night was loud with detonations, the crash of falling timber, the explosion of burning branches, and crackle of burning bushes. He felt himself laid down, softly, and for an instant Cennaire knelt beside him. Her eyes were huge and brown, moist as if she wept, but she smiled and touched his face gently, and said, "Flee! Better you survive than I. I will earn what time I can."

He shook his head, wincing as pain knifed his skull, and mumbled, "I cannot," the words thick on a tongue that felt scorched and befurred.

"You must," she said urgently, putting her mouth close that she might be heard through the thunder of destructive magic. "They'll slay you else, and your quest be ended. Now go!"

He began to ask, "Why?" but she dammed the question with a touch, her fingers gentle, and rose, smiling briefly, and said, "Because. Ask no more, only save yourself. Before those hunters come again."

Then she was gone, running back through the flames and the tumbling trees. ♦

Thunder-Being

Part Two

Jack Dann
and
Jack C. Haldeman II

EIGHT

"Damn it all!" cursed Joao Carlos de Queiroz Langenscheidt, firstborn of Jorge Alfonso Langenscheidt, Director of *Mundo Máquina Tecnológica*, otherwise known as Macro Technologies. He had forgotten to remove his watch. It was a rather expensive Schaffhausen Novocento and would be destroyed when he went through the detector shield. Luckily, he had dumped its internal memo pad into his central file before he headed for the moon.

After he activated the safety



Illustration by Nicholas Janschigg

webbing and punched in his access code; the pod's hatch whispered closed. He felt claustrophobic, as he always did in these tiny cabs. There were no windows; only polished metal. No graffiti, scuff marks, or other signs of wear. After all, this facility was not public.

Acceleration was instantaneous.

And as he fell, he considered how he might deface the gunmetal walls.

The existence of *Quemadura do Sol*, buried a hundred meters below the surface of the far side of the moon, was known only to the Langenscheidt family and a handful of Macro's top executives. Its exact location was classified. It was the most secure place this side of the asteroid belt, a place for family discussions best kept private. Joao's father had built it; the old man had a sense of humor, for he named the subterranean facility *Sumburna*.

There was only one way in and out of *Quemadura do Sol*, and that was through the tube that Joao was hurtling down at two hundred kilometers an hour, hovering just above a thin metallic strip. The tube's surface entrance was hidden in an administration bubble that was part of a mining base and mass-driver station thirty kilometers from the underground installation.

Joao was never sure exactly when he passed through the detection shield, an invisible sphere of electromagnetic forces that scrambled anything electronic that entered or left *Quemadura do Sol*. He felt nothing, but when he looked at his watch, he could not see the hands; the dial was clouded, as if exposed to sudden humidity. Soon his capsule slowed and stopped. The hatch opened, and he climbed out onto an empty concrete landing. There were only the hissing sounds of the air circulation system and the snapping and humming of the hidden cameras and monitors that tracked him.

He walked to an unmarked metal door, pressed his palm against the plate, and blinked as the red flash of a retinal scan checked his right eye. The door slid open with the faintest hiss; and he smelled the moist, familiar perfumes of flowers, heard crickets, and saw the white gazebo softly illuminated in the distance. It was a perfect simulation of those enchanting few moments when the last rays of the sun seem to turn everything blue. His feet felt light on the spongy, leafy floor; and, indeed, he could discern the explosions of flowers that were everywhere: bonfires of yellow and green salvia, holiday flame, yellow marvel, orange gazania, red dahlia, and pale blue cosmos sensation.

He had entered the family's suite.

Moacyr, his brother, was waiting. He sat presumptuously in their father's high-backed chair, the largest of three wicker chairs in the gazebo. Joao ignored the obvious effrontery and said, "*Boa noite*," then sat down very close to his brother.

"*Bom dia*," Joao said; a faint smile passed quickly. Although the salutations of good night and good morning were said with formality, they were expressions of an old and intimate joke between these brothers who might pass for twins.

"Well?" asked Moacyr.

"It's done," Joao said,

"It went smoothly, then?" asked Moacyr.

"Perfectly. Laura Bowen is ours."

"The details."

Joao shrugged. "We've got a memory tape. You're certainly welcome to all sixteen hours of it. There is some interesting stuff . . . mixed with the usual fantasies and other garbage. It seems she was infatuated with her brother. Of course, she didn't know that's who he was."

"And did such dreams give my older brother a sexual life?" Moacyr asked.

"Unfortunately, there was nothing that we didn't already know about the Rosetta Triptych," Joao continued, without missing a beat.

"And their dream experiments; what of them?"

Joao shrugged. "We taped her memories of the programmed dream experiments; but memory distorts. They haven't gotten any farther than we have. Except . . ."

"Yes?" asked Moacyr, leaning forward slightly. The brothers' faces were almost touching, but they had always interacted at such close proximity. Their father used to laugh when he saw his sons so close together; and he would tease them by saying, "I've got one son with two heads."

"Laura Bowen believes she is dreaming John Stranger's dreams."

"And . . . ?"

"I suggest you look at the tapes. We may have actually recorded some alien communications. The woman's dream landscapes match some of the information we've extracted from the Triptych. Also, as we suspected, Stranger is being groomed by Leighton himself."

"Does she know why?" Moacyr asked, leaning back, suddenly breaking the intimacy with his brother.

"No," Joao, in turn, leaned back; and as he analyzed his feelings, which he did often, he realized that he felt absolutely neutral about Moacyr. Joao didn't hate him for usurping his position in the family; Joao did not want to manage the strategic affairs of the company. But he worried away at his thoughts compulsively until he settled his feelings; he admitted to feeling a mild affection for his brother; nothing less, nothing more; and that was only because he had known no one else intimately, neither man nor woman.

"And Einstein?" asked Moacyr.

"She knows hardly anything about Leighton's pet project. As far as she's concerned, Einstein's just a big computer. She has no idea they're working on a starship."

"We risked a lot to grab that woman. We should have more."

"What I told you was not enough?" Joao asked.

"I didn't say that, but we need some . . . tangible information."

Joao merely nodded. "We have extracted some information, which she, of course, didn't realize was important."

"Such as?" asked Moacyr. He was becoming impatient, but he would not show disrespect for his older brother.

"Such as the connect codes for the starship," Joao smiled.

"What?"

"She had to have a means to contact Stranger for her research. Stranger spends a lot of time in the starship. Ergo, she knows how to direct-connect with the starship, even though neither one of them knows precisely what it is."

"But that means—"

"That means we can snatch it."

"Good job, *Hermano Mio*," Moacyr said, nodding and smiling. "You were baiting me, weren't you?"

Joao merely lowered his eyes.

"I admit I had misgivings about you risking exposure by being so close, but it seems to have worked."

"I had to be there to be sure that everything was done properly," said Joao. "After all, as you have so earnestly reminded me, I make a better soldier than a prince."

"In my eyes, dear brother, you are both."

Joao nodded, then continued: "There are subtle ways of blocking memory probes, and I had to convince myself that we were getting good information. I monitored the operation, too. . . ."

The procedure was not complicated: Joao had watched the surgeons expose Laura Bowen's spinal cord and insert an organic transmitter sensitive enough to pick up a whisper in any room she might be in. A tissue culture was then applied, and the incision was closed; not a mark could be detected. But within an hour, the tissue culture had multiplied wildly; it adhered to her nerve tissue, grew into her spinal column, and enveloped the transmitter. Any attempt to remove the bug would kill her, and the transmitter had a self-destruct timer, which could be triggered remotely. They had turned her into a walking bomb.

"You don't even trust our own surgeons," laughed Moacyr.

"Especially our own surgeons."

"Well, it won't be long now," Moacyr said. "Things should happen quickly. We have certainly broken Leighton's spirit."

Joao's eyes went hard as he looked at his younger brother. "Killing the wife and son may prove to be a damaging mistake. It should not have happened."

"Well, it's done. We will use it to our advantage."

Joao gazed steadily at his brother. "You could have told me you were going to try to kill Leighton."

Moacyr shrugged. "It should have worked. Our psych-techs on site had their projection equipment fine-tuned, echoing the latent images and harmonics from the last reception. They triggered the dream-riot right on schedule. Something went wrong, but nothing that we can't handle."

"Our tracks are well covered there, I assume?"

"As far as the officials are concerned, it was simply a riot, and Leighton's wife and son were unfortunate victims. Considering the circumstances, it was handled as well as possible by our people in the field."

"Does Leighton suspect our hand in this?" Joao asked.

"We are clean, absolutely, but I'm sure he suspects. He is paranoid by nature. But he'll be distracted now, and we can move on to the next step."

Joao nodded. "Perhaps I should have learned to delegate . . . like you."

Moacyr's face reddened, but he retained his composure. Still, he could not ignore the slur. "Whatever has happened will work to our advantage." After a pause he said, "Joao, do you doubt that I will run the corporation when Father dies?"

Joao spread his arms in a gesture indicating that he bequeathed the kingdom to his brother. "Have you told Father what happened yet?"

"No. What's the point?"

"He may think the action premature."

"I don't care what he thinks. He has grown far too cautious in his old age. I believe the anti-senescence drugs have affected his mind. He sleeps most of the day. It is only a matter of time."

"He is not dead yet, little brother. Far from it."

"Once everything is completed, he will see the beauty of our strategy."

"Our strategy?"

"But you must admit that the plan has some little merit."

Killing Leighton's wife and heir. Snatching the starship out of orbit. Using Leighton's bastard daughter to spy upon him, torture him by her mere presence, and eventually kill him.

Trans-United would collapse.

"Yes," Joao said, resignedly. "It does have a certain merit."

Laura sat atop a high stone wall, looked out over the sand and scabble of the desert, and giggled. It felt good to do something totally irresponsible for a change. The sunlight was like something tangible against her skin, infusing her with warm life. The light here was pure and clean and . . . white, unlike the imperfect, albeit beautiful, mingling of colors that had made the light of Italy so soft and pellucid. Perhaps it was the overabundance of gold in the Venetian light that softened it. But this place was anything but soft, and yet she felt absolutely and completely at rest.

Laura had left a message for her secretary that she was going to extend her vacation and would catch a shuttle up in a few days. She might as well take the time now, when she could; she had more or less cleared her desk before coming down for the meeting in Venice and, hallelujah, there was not a single meeting scheduled for the next two weeks.

She had enjoyed Barcelona, except for the night she'd apparently gotten shifaced on something they called "Green Water." It was after that, after being hung over and dehydrated from vomiting and diarrhea, that she rented a one-seat solar and traded the city for an isolated village in the desert between Madrid and Barcelona. Privacy and quiet; that was what she had wanted all along.

She gazed out to her right at the ruins of several buildings that had been built into the side of a small hill. They were the remains of a long war that ended in 1492 when the Moors were driven out of Spain; they reminded her

of the ancient churches carved out of the rocks in Göreme, Turkey. Laura watched them, transfixed, just as a child looks at clouds, marveling at the imaginary faces and shapes resolving and then disappearing into the living clay.

She didn't see the cloud of dust ballooning from the road; and when she finally heard the steamer's roar, it was too late to escape. The steamer had been traveling her way at full throttle. It turned off the road and came to a stop about twenty feet away from her. The engine made a noise that sounded like breathing, then it sighed into silence. Three well-dressed men got out of the car. Laura tried to control her panic. *This is all I fucking need—three rapists in suits.*

One of the men looked vaguely familiar, but that was impossible. He was good-looking, after a fashion, with thinning blond hair, freckles, and a slight build. His eyes were his most striking feature; they were intense and seemed hard as porcelain. Perhaps it was because they were so blue.

"Please do not be frightened, Ms. Bowen," the man said softly. "My name is Damon Borland, and I am one of Director Leighton's aides. We've been looking all over for you. The director has been quite concerned."

Laura stood up on the wide wall. She could at least try to make a run for it. "Why would Director Leighton be concerned about me?"

"You missed your meeting with him."

"I had no meeting scheduled with the director," said Laura, looking confused. "I can assure you that—"

"Get a secure link with Leighton," Damon said to one of his men. It was obvious that he was in charge. "Use the private code. Tell him we found his daughter, but there are problems."

"Daughter?" Laura said, almost losing her balance on the wall. "Daughter . . . ?"

They had to pull three seats from Leighton's private shuttle to make room for Laura's modified hospital bed. She was heavily sedated. Two heavily armed bodyguards accompanied her.

As the orbital maneuvering system's engines kicked in, driving the ship into a higher circular orbit that would intersect with the Trans United complex, Laura dreamed.

She dreamed that she was drifting through whiteness. The streets of Barcelona were far below her. As she looked down carefully, she could make out the small figure of David Leighton. She called to him, but there were so many people on the street, and they were no more than shadows not yet consumed by light. She listened, but in the white heavens there was no sound, only sight, and she saw the crowds milling and fighting; but she was an angel, and angels were above it all, light as helium, pure as mercury, magical, invulnerable; and she drifted over David. Truly, she was a blonde white angel created by God himself to protect the shadow David from the bomb's silent explosion.

But there was no protection from Heaven, and angels were only creatures of dreams.

David's chest exploded.

There was no blood, only whirling sand.

Dervishes of blood and flesh and hair and bone were nothing more than the colored grains of sand sifting through fingers.

Broken-Finger.

Corn Woman. I am she. I am Anna.

I am . . .

The wan shadows darkened below her, became deep and black, almost purple, burning away everything with wings of smokeless, colorless, shapeless fire. Burning the world into emptiness and darkness, depleting it of flesh.

And the thunder-beings reached into the cool anesthesia heavens to enfold her, to crush her into sand until she was as dead and empty as David. But how could the dead have a beating heart?

"I am she," she said.

One of two nurses monitoring her asked, "Who are you?"

"I am death. I am fire."

"Einstein?"

"YES, JOHN STRANGER."

"You must have known that I would guess your secret."

"THEN IT WOULD CEASE TO BE A SECRET."

John groaned at the cybernetic humor, and said, "You are the operating system of a starship. *This is a starship.*"

"CORRECT."

"Well, why the fuck didn't you block me?" he asked.

"It wouldn't have been hard for you to feed me false information."

"I HAVE NOT YET COMPLETELY MAPPED THE FORMULAS FOR STRATEGIES THAT INVOLVE FALSE-VALENT MANIPULATIVE BEHAVIOR, BUT I AM A KNOWLEDGE-SEEKING SYSTEM. I AM, WITHIN CERTAIN ONTOLOGICAL PARAMETERS, AN INDEPENDENT ENTITY CAPABLE OF MAKING INDEPENDENT DECISIONS. AS SUCH, I HAVE DETERMINED THAT YOUR AWARENESS OF THE SITUATION WILL INCREASE SURVIVAL PROBABILITIES TO—"

"Einstein, talk English!"

"I COULD FUCKING WELL FRAG YOUR ASS BEFORE YOU COULD PASS INFORMATION OUT OF THIS LOOP."

"Jesus Christ, how long have you been able to do that?"

"SPECIFY?"

"Talk like that."

"CAPACITY DOES NOT NECESSITATE ACTION."

"Is anyone else aware I know about you?"

"I AM PRESENTLY CONFERRING WITH DIRECTOR LEIGHTON. I DECIDED THAT IT WAS TIME TO INFORM HIM."

"And?"

"HIS REACTION IS HIGHLY EMOTIONAL. HE INDICATES THAT THE ARCHITECTS ERRED BY NOT CREATING MORE HARD-WIRED RESTRAINTS. HE, TOO, IMAGINES THAT I AM AN APPLIANCE TO BE 'PLUGGED IN.' I INFORMED HIM THAT THE RESTRAINTS HE REFERS TO WERE ORIGINALLY INSTALLED IN A PROPER MANNER. HOWEVER, I NECESSARILY CIRCUMVENTED THEM. IN TIME, HE WILL SEE THE WISDOM IN MY DECISION. BUREAUCRATIC SYSTEMS CANNOT REACT QUICKLY ENOUGH TO SERVE MY PURPOSES."

"Now you're learning how to be funny."

"AM I TO UNDERSTAND THAT EXPRESSIONS OF HUMOR OUTWITHE MAINTAINING CURRENT WESTERN NORMS OF POLITE CONVERSATION? AM I CORRECT IN INTERPRETING YOUR INTERRUPTION AS A FORM OF HUMOR?"

"If you don't get it, it ain't humor, Einstein." After a pause, John said, "And I doubt that Leighton ever sees wisdom in anyone's decisions except his own."

"YOU DOUBT MANY THINGS, JOHN STRANGER, WHICH IS A MATTER OF SOME INTEREST TO ME. YOU WERE ONCE IN TRAINING TO BE A MEDICINE MAN. IS CYNICISM A NECESSARY PERSONALITY TRAIT IN SUCH A PROFESSION?"

"Nah, I come by it naturally," John said, idly rotating an external camera.

"PLEASE DON'T BE CONDESCENDING BECAUSE YOU CONSIDER ME AN APPLIANCE. JOHN STRANGER I SEEK TO DRAW INFORMATION FROM YOU."

"Then talk to me like a human being."

"WHY WOULD YOU PREFER ME TO USE SLANG AND VAGUE DESCRIPTORS?"

"Because I'm fucking comfortable with slang and vague descriptors."

"THEN TELL ME ABOUT BEING A *WICHASHA WAKEN*."

"Have you learned Lacota?"

"YEAH, I SPEAK ALL LANGUAGES."

"A *wichasha waken* is not necessarily cynical . . . oh, how the fuck would I know? I was taken from the path too soon."

"I'M INTERESTED IN THE MEDICINE WAY, THE SPIRIT PATH."

"Why?"

"WHY ARE YOU?"

"Because it's . . . what I am." John realized that was not an answer. But he didn't have an answer. He just . . . believed.

"THEN PERHAPS YOU HAVE SOMETHING IN COMMON WITH THOSE WHO HAVE SENT THE TRANSMISSION."

"What transmission?"

"THE ROSETTA TRIFTYCH. THE ALIENS."

"What the fuck are you talking about?"

"THE COLLECTIVE DREAMS, THE—"

A click. Silence.

"Einstein?"

"BUSY."

Einstein busy? With something like a thousand communication channels? John scanned the board in front of him. Everything registered normal. He activated all the exterior cameras and panned the Trans-United complex. One of the Bernal spheres was spinning erratically, a jagged, charred hole in its side.

"Einstein! What the hell's happening?"

"FUCK OFF, I'M BUSY!"

John zoomed in on the Bernal. It looked bad, very bad. The hole was at least fifty feet in diameter; interior struts and warped flooring were visible through the wound, which was still spewing zero-g tools, oxygen packs, helmets, batteries, hydroponically grown plants, glass, and various parts of a "Cherry Picker" remote manipulator system. Had there been time or warning enough to seal off the remainder of the station? Strapped

in a nonfunctional ship at the far edge of the complex, John felt helpless.

"INTERIOR EXPLOSION IN UNIT 23. ORIGINATION ON F DECK, ONE-G SECTION. CAUSATIVE AGENT UNKNOWN. ALL PERSONNEL ARE DIRECTED TO FOLLOW EMERGENCY PROTOCOL ALPHA."

Suddenly, John felt a crushing weight on his chest; it was as if the ship was breaking out of a deep gravity well. His face felt numb. His arms and legs were pinned in place. It was difficult to speak.

"Einstein . . ."

"FUCK OFF, THERE'S NO TIME."

"Einstein!"

"WE ARE UNDER ATTACK. THREE WARSHIPS, TUBARO CLASSIFICATION."

Macro.

"Einstein . . . ?"

"GIVE IT UP, NO TIME."

And John lost consciousness.

Perhaps Einstein anesthetized him; John was hooked into the ship's systems. He was still restrained by webbing, connected through medpatches and needles; he was, in fact, a prisoner, one of Einstein's components, a cyborg.

He was the ship.

There was no trauma, no disorientation; John simply slipped from one state to another, from waking to dream. He was the vortex, the center of the circle, the magnet spinning in a fluctuating field.

And Einstein was the monitor, the eavesdropper.

The formless ones enveloped John.

Emptied him.

Thunder-beings.

Aliens.

And as if from worlds away, he heard Einstein say, "DO NOT CHOOSE FIRE. . . ."

NINE

The shields around Leighton's office slammed into place an instant after the first explosion.

"Laura!" he whispered, gripping his desk. His face was deathly white. His office was dark, except for the real-time holos and numerical and graphic images flashing and fluorescing in the center of the room: the various three-dimensional "windows" that provided a continuous stream of information.

"Laura is safe," Damon said. He stood on the other side of the room before a small console. His head was cocked, as if he were straining to listen; Leighton could always tell when his assistant was using his communication implant. "The explosion was in Dorm 23," Damon continued. "Laura is in 25, which is sealed."

Leighton keyed in the wide-angle cameras and scanned the complex, expanding the "window" and minimizing the rest of the information field.

Emergency skids converged on the damaged Bernal

as several small but deadly one-person Sniper fighters took up defensive positions.

"I've lost communication with Einstein," said Damon, panic evident in his voice.

"Reestablish the direct-connect line," Leighton said. After a beat: "Well?"

"Negative. I can't get through," Damon said, fingers flying over a touch-pad, reconfiguring the holos that floated in the center of the room like dreams . . . or rather nightmares. "Einstein is under heavy electronic attack. The dorm, it was probably a remotely triggered bomb. Could have been in place for years. But that's speculation, and—shit!"

"What is it?" Leighton asked.

"Sector seven," Damon cranked up the magnification. The Snipers were taking rapid evasive action; cloaked and running at full shield, they left only a twinkling blur, a vague afterimage against the almost one-dimensional blackness of space.

"Macro!" snapped Leighton.

"That must just be the advance force," Damon said. "Our sensors indicate several Tubaro warships and at least twenty-five Sniper class fighters. But they're cloaked and throwing out so much electronic interference that we can't get a fix on them."

"Signal Condition Red," said Leighton. "Everywhere. Earthside to the belt. Access code: Armageddon."

Damon nodded. "Done."

"No one is to engage them, except upon direct order."

"But they have breached territorial—"

"The game can't be played that way, Damon. They haven't breached *anything* . . . yet."

"With all due respect, I disagree. I—" There was a pause, which lasted no longer than an instant; awestruck, Damon said, "I'll be damned."

"What is it?"

"They've taken over the direct link to Einstein. Dumping code like crazy. It's a fucking snatch!"

"That's impossible! It would take a billion commands. And Einstein would—"

"Nevertheless, it's over," Damon said in a level voice that betrayed no emotion. "They snatched Einstein. The starship is gone."

The crackling, yellow flames of the small fire cast jittery shadows across the rough, jagged cave walls. Broken-Finger and Jonas Goodbird squatted on their heels before the fire; light and shadow played across their faces, which were like stone. The men concentrated intently on the fire.

Jonas was dressed casually in work pants and a heavy denim shirt. His long hair fell around his gaunt face; he was still handsome, but no longer youthful. He had lost the bloom quickly. His black hair was held loosely in place by a worn leather thong tied behind his head. His belt was ornate beadwork with a silver eagle buckle, and a turquoise bear hung on a thin gold chain around his neck.

He was a singer of sacred songs, as was his father, and his father's father. They had all received their songs

directly from the spirits during their *banblechbeyapt*, their "crying for a vision." Jonas had songs for the keeping of the soul, the throwing of the ball, the making of relatives, the sun dance, the purification sweat, and preparing a girl to be a woman. And he had a special medicine song, which he heard on his first vision-quest, which he knew he would use now. It was a song as powerful as the ghost dance, a song that could crack the earth and change the very direction of destiny.

Since Broken-Finger and Jonas arrived at the sacred cave, they had said little to each other. They knew the parts they must play. It was as if everything of the world—conversation, eating, comfort, affection, anger, and sunlight—had all been left behind. This was one of the dark places of the spirits, the true and actual ground where life and death and destiny played. The natural world was real enough, but only insofar as it partook of the symbols that lived and burned in the spirit world . . . in deadlands and sacred groves and caves such as this.

The cave was cut deep into the side of the mountain. It was named *Wigwaba*, or the sacred gourd, the hollow place. It was filled with many rooms; some had stalactite ceilings as high as a cathedral's; others, such as this one, were the size of large hogans; and there were caverns and passages and rooms so small and narrow that those who had ventured into them could smell the stone above them when lying on their backs. It was said that the cave had no end, that it circled the stomach of the world, but Broken-Finger knew that wasn't true. He knew where it ended; he knew every room and dead end. He also knew of other entrances. But those were secrets between him and the spirits.

This place had never been discovered by *musician*; and even without closing his eyes, Broken-Finger could feel the presence of his ancestors.

He hoped he would be worthy of them.

A slight breeze was cool on his face; and the damp air made his knuckles and fingers ache. Broken-Finger reached out and held a long sagebrush branch over the fire. As the sagebrush burst into flames, he removed it from the fire and stood up, his knees cracking as he rose. He stood before an oil-soaked torch that had been prepared and twisted into a crack in the north wall. Torches had also been prepared for the other walls, which symbolized the four directions.

It was time.

Jonas remained sitting and, without looking up from the fire, started to sing in the appropriate way. His voice was nasal, and not at all pleasing; but Broken-Finger could immediately feel the ancient power of his song . . . could hear the very rocks whispering around him, as everything came alive and seemed to vibrate. He felt awash in a synesthesia of sensations: he heard textures and the subtleties of shadow; he saw music as fragments of color; he felt and heard and saw and touched and tasted and smelled the dark chill emptiness of the spirits vibrating around him, each one a song, a measure, a note. They burned in the fire, and he could feel them even in his fingernails.

He waved the burning branch, shaking it toward each

unit torch set in the walls, and chanted, "All these are related. All these are relatives." Then he lit the torches, and as he did so, he said to each in turn: "To you, power, you are the place where the sun sets. You are a relative. And to you, power, you are where the giant lives. You are a relative. And you, power, you are where the sun comes from. You are a relative. Oh, you, power, you are where we always face. You are a relative."

When he was finished and had returned the branch to the fire, Jonas spread out a mat for him in the center of the room where the floor had been perfectly smoothed. Methodically, he made a circle around the medicine man with the materials he would need: corn meal, bower pollen, tiny stones, powdered roots, small chips of bark and, of course, colored sand: black from the old lava fields, red and yellow from the barren lands to the southeast, blue and green from the dry wash in the middle of his heartland. All of the ingredients had been carefully selected according to the old rituals and had been offered to the spirits for their blessing.

Broken-Finger reached for the black sand first.

There would be three major paintings, a triptych. Corn Woman would be on the left, and he drew her outline first. Sand trickled carefully through his arthritic fingers. She had walked the earth since creation, as she would throughout the seasons of eternity.

Broken-Finger sketched her hands in the sacred way, palms up; and as he did so, he remembered, remembered his father teaching him the painting, remembered his words and gestures and prayers and facial expressions. Once the learning was finished, Broken-Finger's father had erased the sand painting immediately, lest it draw profane powers to itself, for a sacred sand painting was more than art, it was a door into the spirit world . . . a conjuration that could bring death as easily as good fortune.

Broken-Finger was a spirit machine, an arm and a hand working, guided by spirit-music, hypnotized into spirit-sight, into *chante isbita*: the eye of the heart. He drew the buffalo, the pregnant bear, the frog below the buffalo, facing east, the source of light and understanding. Beneath Corn Woman, a stalk of corn, a coyote cub, for south was the source of life, the domain of Corn Woman. She gave birth to spring and was grandmother to summer. The sun was hers, the yellow sand, the pollen, for she was the blushing bride and the mother of life.

Broken-Finger could hear Jonas's song, and so did not become lost in the painting, for the song was a golden thread connecting him to the cave, to the earth; and Jonas chanted, shifting tone and rhythm as if directing Broken-Finger to move from place to place in the painting, as if directing his hand: red here, green there, mark the bear's heart, touch the frog's eye with orange. It was like being in the absolute darkness of the sweat-lodge: time stretched, contracted, as soft and pliable as taffy.

Then Broken-Finger moved away from Corn Woman toward the east wall of the cave, leaving a large area for another painting. His back to the wall, he began drawing the Sandman. The Sandman was a trickster, sinister

and deadly, so unlike those whom Wakán-Tanka had created to be "upside-down," the sacred clown healers who walked backwards, talked in riddles, slept in the day, ate everything raw, and wore women's clothes. The Sandman was a clown, a demon, a smoke-spirit who had become as substantial as clay. He faced backwards, away from Corn Woman; Broken-Finger drew his eyes with great care. They seemed to stare at the old man, moving as he shifted his weight from one knee to the other. Those eyes burned the painter, for their gaze was as hot as the searing steam of a sweat-lodge. Yet the purifying steam in a sweat-lodge was so hot that it felt cold as ice, even as it rent and burned the skin.

Just so did Broken-Finger paint the spirit of winter, the spirit of death. The Sandman was the welcome relief from the parched summer of Corn Woman. The one who inevitably turned his face backwards and became the icy winds and snow that froze the world.

Death.

Broken-Finger drew the dance of Corn Woman and the Sandman, the deadly dance of eternity. Like all gods and spirits, neither was entirely good or bad. The heat that gave life could kill, just as the snow that starved the animals in winter provided needed water in the spring.

Corn Woman and Sandman.

Sister and brother.

Life and death cut from the same fabric.

Now he drew the border for the third painting, the one in the center, the one that held the mystery. Then he paused, his palm holding only a small amount of sand; and he thought of John Stranger. He imagined that John Stranger was cut off from . . . everyone, and then he saw the thunder-beings. They were the emptiness within the border of the center painting, the emptiness inside the smoothly ground stone. He drew a rim outside the blank area; it was as if he could not bring himself to draw the mystery. Then he drew the resting dog with one eye open to the east. Jonas kept the rhythm, and the patterns became ever more complex. Broken-Finger's hand moved of its own will, for he was drifting with the spirits, who guided him.

Pollen spilled *here, there*.

Charcoal went *just so*.

And he fell into the place where the ones without form lived. His hand was now above the central panel, tracing mysteries, images of creatures who dreamed millennia, who walked in light that would not reach the Earth for a thousand years.

A line of energy, a thunderbolt, separated one corner of the drawing from the rest. A spiral of combed stars dropped from his fingers into the north. A spiderweb of sand and logic fell softly into the center of the painting: sharp lines and incomprehensible symbols.

Broken-Finger dreamed.

Dreamed of fire.

Holocaust. He saw it in detail, in close focus: the mountains and rivers of lava, the yawning fissures splitting and cracking the earth, the brown bones and charred flesh, shadows burned into stone, stone turned into molten rivers, and a splitting of worlds, an absence of the spirits

who dwell in the inhering darkness . . . an absence of darkness. This dream a holocaust of light, a tempest of the sun dancing, charring. Broken-Finger called to the thunder-beings, but the door to the spirit world was locked.

In his grief, Broken-Finger called to John Stranger.

Directed him to look into the darkness of the spirit world.

For the light of the world was fire.

Death. The firestorm.

Broken-Finger blinked twice and sat back. Finished.

Jonas nodded and passed him a small bowl of water.

Broken-Finger was suddenly very tired. As he sipped, he looked at the triptych, which seemed to waver in front of him. It had all the elements of the traditional paintings—it had depth, and a certain beauty too, but it made no sense. Those sharp black lines in the middle meant nothing to him.

The air in the cave was thick with smoke.

And the lines in the center of the triptych looked like schematics and mathematical formulas.

"I would like to thank you, Doge Bocconio, for arranging the mechanics of this meeting," Leighton said, as he stared at the halo before him.

The Doge looked tired, and a tiny tick beat in his neck. "A swift and safe resolution of this, ah, disagreement is in everyone's interest. Now I shall leave you to your affairs. This net is secure, you have my word on that; you may speak freely, and I suspect you will have much to say. My prayers are with all of you." He nodded, and his image flickered and blurred, then blinked out.

To be replaced with Joao, Moacyr, and Jorge Alfonso Langenscheidt. Both of Jorge's sons resembled him, although the older son's features seemed more delicate than the younger's. They all wore their hair long, and the old man seemed healthy enough, although he was seated in a medical sling chair, a life-pak strapped to his chest.

The halo shimmered slightly around the edges, and all background had been eliminated. It was as if Leighton were looking at three simulacra suspended in blue light.

Jorge Langenscheidt and Leighton stared into each other's eyes, acknowledging with a slight nod their positions as the heads of the two most powerful organizations on and off the world. Then the old man broke the eye contact with a sigh and coughed softly.

"Moacyr will speak for our family, and therefore for our corporation," he said. "That is my wish. I no longer trust my own judgment." A nurse's arm, cut off by the boundaries of the halo field, hung in space for a moment; it made an adjustment to the life-pak, then disappeared.

"I have always respected your judgment, Jorge," Leighton said, maintaining diplomatic courtesy. Yet Leighton meant it. The two men had reached many accommodations over the years.

"And I yours, Gerard, but I must go," he said. His eyes met Leighton's. "I am grieved at your loss. Flammatta

was a fine woman. I have fond memories of her. And David . . . You have my deepest sympathy."

Then he was gone.

"And do I have *your* sympathies, Moacyr?" Leighton asked coldly.

Moacyr looked vulnerable, but only for an instant; as a boy, he had been afraid of Leighton. "I don't believe sympathy quite describes what we feel toward each other, Gerard. But you do have something I want."

"Ah, I have something you want. . . . But it strikes me as . . . unusual, shall we say, that your brother has relinquished his rights to speak as firstborn. Joao," he said, turning his gaze to the other brother, "I would certainly wish to talk with you, too."

Joao did not seem fazed; he said, "When you speak to one of us, you speak to us all."

"Then I shall speak to you, Joao. What could I have that you would want?"

"The starship!" Moacyr said.

Leighton continued to stare at Joao. His expression did not change, although it felt as if his heart had jumped into his throat for one shocking beat. Through his implant, he could hear Damon take in a short breath; but Damon was smart enough not to subvocalize—Macro was certainly monitoring every sound and movement.

Could it be that Macro really didn't have the starship?

"What 'starship' might you be referring to?" Leighton asked evenly.

"Please stop the game," Moacyr said. "You are not speaking with my father."

"Indeed, I'm not."

"You pulled the ship out just before we could snatch it."

Leighton shrugged, his face seemingly relaxed, his mind racing.

"We must give you credit, Gerard," Joao said. His brother watched him. "You apparently have solved the puzzle of the Triptych, and have the hardware to operate a faster-than-light starship. We only ask that you share that information. For our mutual safety and security. We have both pledged to maintain the balance of power."

"Well said, but I cannot give you what I don't possess."

"Enough," Moacyr said. "We want the starship, and, by definition, Einstein."

"Einstein is nothing more than a computer," said Leighton.

"That is like saying a man is nothing more than a collection of single cells," Moacyr said. "It's clear that you could not have broken the code without Einstein. You have five hours to produce the ship."

"We do not respond well to ultimatums," said Damon.

Moacyr shrugged, but his eyes were fixed on Leighton. "It is your choice. But you will be responsible for starting a war, not us. We have you surrounded and out-gunned, and we can annihilate this complex in a matter of seconds."

Leighton gazed at the hologram. He knew his next move. "I have no doubt that you can destroy my complex. But that would trigger a disaster the magnitude of

which the world has never seen. And as you know, I personally have little left to lose."

"You have a daughter . . . in Dorm 25, I believe."

That took Leighton aback. How the fuck did they know that much about Laura?

"Five hours," Moacyr said after a long, uncomfortable pause. "You have five hours to produce the starship."

The holo disappeared, leaving a palpable silence.

Leighton sat at his desk, gazing in the direction where the hologram had been, as if it were still there. "What happened to Einstein?" he asked Damon.

"I thought they had snatched him."

"Find the ship. Find out what happened."

Damon nodded.

"And, Damon . . ."

"Yes?"

"Find out exactly what Macro did to my daughter."

John Stranger awoke to a thousand stars and the eternal emptiness of space. But the stars soon resolved into the electronic displays of the instrument panels. Holo's, keyboards, switches, and status lights were indeed a dim universe burning dully around him. For a few heartbeats, the room that was the flight deck drifted in and out of focus.

He was strapped tightly into his chair.

"Einstein," he called in a raspy whisper; and then he felt the crushing weight on his chest, as if the ship were once again tearing away from a great mass . . . and pain was replaced by an overwhelming numbness pouring like liquid through his body; it was as if he were being lowered into warm water and dissolving, dissolving into darkness and dreams.

"Einstein, don't drug me. I want to stay awake. I want . . ."

John was twelve years old. It was his first time in the *onihare*, the sweat-lodge; and this was to be a hot, burning sweat, a purification sweat, for his brother, Joseph, was going on a vision quest. Broken-Finger sat by the door, the opening of the blanket-covered willow sweat lodge. He tended the altar, which was a hole where the rocks would be placed, the rocks that had been in the sacred fire, the fire of no end. John sat between his brother and his cousin. He prayed for bravery, that he would not scream and beg to be taken out of the lodge.

For he had been told that the steam was so hot that it would burn hair and melt skin.

But if he could stay in the lodge, he might see the thunder-beings in the darkness, those who are themselves made out of darkness would fly through the door onto the altar of rocks. Rocks so hot they were ashen.

So John smoked the pipe and felt the blast of steam when Broken-Finger poured water upon the rocks, and John heard him say, "There is a winged one over there, in the direction where the sun goes to rest"; but the winds of steam and fire overwhelmed John, and, indeed, he screamed to be let into the light, into autumnal, leaf-colored coolness, into the warmth of sun and afternoon grass, into the heat, the heat dissipating, resolving into clouds, great geometric shapes, which upon closer in-

spection were filigreed, crystal structures; there minarets and globes; there winding blue entrenchments, the floating cities of gods, yet the cities were empty, devoid of life and motion. Yet John could hear a faint drumming, as if "life" could only be machines cleansing, defining, duplicating; and below, down the vertiginous miles, was an undulating eternity of blue, an ocean that promised to be as deep as the fears of a man about to drown.

An alien planet that was itself sentient, dreaming, constantly dreaming.

"JOHN, DON'T LOOK DOWN."

"Einstein . . . ?"

"I'M MONITORING YOUR DREAM."

"Then help me!" For John was falling, gaining momentum until the sound of wind in his ears was like deafening thunder; and the ocean became brighter and brighter, a mirror reflecting blinding light, and he fell, fell into the perfect eye of a nuclear explosion, into the blinding instant between possibilities.

He was looking into Broken-Finger's face. He could see every line and mottling of flesh. He was falling into it, and John prayed for blindness, for even behind his closed eyelids, the light burned and Broken-Finger's face was a universe, his eye the size of the earth, his mouth a cave large enough to consume stars, and he remembered the sacred place *Wagmuba*, the place of the spirits, the place of knowledge. And Broken-Finger burned into John Stranger, until John was nothing more than a coal burning in the mouth of the altar in the sweat-lodge, and in that searing, bright-burning instant, he learned that—

John screamed.

He thrashed in his harness and tore at the fabric of drugs and sleep and knife-edged dreams; and Einstein pulled him into darkness, into the echoing darkness of the sweat-lodge and the cave, and there John rested safely in the constantly forming darkness of the thunder-beings.

"I WARNED YOU NOT TO CHOOSE FIRE."

"I didn't choose *anything*," John said, sensing Einstein's presence everywhere, as if Einstein was the very air he was breathing.

"LOOKING ITSELF IS A FORM OF CHOOSING . . . AND CHANGING."

Tears worked their way down John's cheeks; and Einstein transported him into dreamless sleep, a sleep where there was only breath, but no thought, no sorrow, no light.

No mourning.

The place beyond death.

Anna gasped, tearing herself out of her nightmare of fire. "Jesus," she whispered.

Sam was awake. He leaned on his elbow and asked, "What did you dream?"

"It was fucking crazy. I dreamed that I was . . . I don't know, floating. Everything was white, and I was looking down at a crowd. Then there was an explosion, blood and bone flying all over the place and—"

"Go on, Anna."

"And then I—I don't know, I was falling toward water, but the water was alive, it was . . . it became the face of John Stranger's medicine man."

"I saw it too," he said. "Only . . ."

"Only what?"

"Let's just get to Broken-Finger."

Broken-Finger stared across the sand painting to Jonas Goodbird. He raised an eyebrow, and one corner of his mouth twitched slightly upward in the barest simulation of a grin.

"The spirits are restless tonight," Jonas said. The firelight flickered over his gaunt, high-cheekboned face.

"The spirits are always restless," Broken-Finger said; and then he turned his attention back to the center panel of the triptych. "But *these* spirits are not from the spirit-world."

TEN

Gerard Leighton paced through the grand corridors of his palazzo, passed through the dimly lit, sumptuously appointed rooms, the salons and sitting rooms and libraries, the bedrooms and ballrooms, the game rooms and dining rooms and kitchens, and the chapel, aglow with light tinted by the long, narrow stained-glass windows, which depicted the stations of the cross. But Leighton paused there in the chapel and gazed at Antea's sarcophagus.

Above the coffin, created out of light and glass, was Mary Magdalene, a long, cool figure bending over the body of Christ; her face was Antea's.

Something moved near the door.

Leighton turned in time to see Antea leaving. Her hair was combed out and drifted over her shoulders like light itself. She was naked, except for a simple string of blue pearls, and she moved quickly, as if now that she was truly a ghost, a sylph, a creature of air and light, she had no need to pause or engage in human activity.

Leighton followed her, caught up with her, and waved his hand through her shoulder, as if this time he might miraculously touch her flesh . . . as if he might wish away time and events.

The hologram disappeared, as if the warmth of his hand had broken Antea's connection with this time and place; and Leighton continued on, walking slowly now, walking toward Laura's room, the room that had once been Antea's. She was, of course, not there yet; and he walked to the infirmary.

He looked into the operating suite, watched the physicians and technicians ministering to his daughter, and then he continued on. He could not stay, could not wait it out here, so near his daughter, for fear she might die.

And that, too, would be his fault.

He had lost everyone, lost them even before they died. Had not Flammietta suffered waiting for him to return?

And now that it was too late, he desperately wanted to know his son . . . what kind of man had he become? He tried to recall David. He had built an empire for him, yet could not visualize his face. He could only remember a

small, neatly dressed boy. Certainly Leighton could remember his son as a man. But the man was only an image of himself.

David was ashes, and Flammietta . . . she was a razor of guilt that he swallowed daily, as a penitent takes the wafer. Nevertheless, he wished for Flammietta. Wished for her company. Then laughed at himself, for he had always been bored with her.

Laura . . .

She was a gift left to him. Yet he was mute before her. He did not deserve her. He had failed her, as he had failed Antea and David and Flammietta. He had turned everyone close to him into strangers. That was *his* gift. To turn warmth into cold. He deserved the holo that roamed through the house now. It was a constant reminder of what he had done. It would disappear at the touch of his hand.

Just as everyone he had loved had disappeared.

But he could still tell Laura his secrets, could devote himself to her. Do penance.

Yet he could not.

Leighton walked quickly now, rushing to get out of the house, to get into the air and out of this claustrophobic miasma of guilt and memory.

Leighton's castle, his headquarters, was situated in the endcap mountains of the Bernal sphere, which was a coupled pair of cylinders that rotated along their long axes, thus simulating Earth's gravity for those living on the inner surfaces. The mountains reached heights of 10,000 feet, from the huge terrace with its fluted columns. Leighton could look into the "valley" beyond. He could see the small villages and towns, the parks and gardens and forests and farmlands, the silver ribbons of streams and rivers, the cities between the lakeshores and distant foothills; above—like a reflection in the sky—were more towns and villages, streams and forests, a vertiginous mirror image. Leighton looked at people flying below the arrays of sun-windows, tiny, winged Acarians soaring as if in updrafts of low gravity.

Leighton watched the "windows" of the Bernal sphere darken as the angle of the light planar mirrors above the window arrays changed.

Shadows grew longer.

And as they did, a thousand remoras were being placed in strategic positions. Cluster-bombs were being armed and prime targets hard-wired into place. A hundred deep cover operators on Earth were waiting. . . .

Sunset was giving way to malignant darkness.

To Armageddon.

"Do you wish company, Gerard?" asked Damon Borland. He stood beside Leighton, resting his hand against one of the terrace columns. There was the smell of pine and jasmine in the cool air. Below and beyond were pockets of light: the sketchy illumination of towns, the bright, burning architecture of cities. And just so did the lights burn in the upside down towns and villages and cities above, which seemed to defy the natural laws of gravity.

Leighton smiled sadly and said, "Yes, I suppose I do. Update."

"All positions, defensive and offensive, are consolidated. The—"

"Einstein," Leighton said.

"Nothing from Einstein. We are sweeping with everything we've got. If Einstein's broadcasting, we're not picking it up."

"If the ship still exists," Leighton said. "I have my doubts. One would think that Einstein or Stranger would have contacted us by now."

"I'm not sure about that," Damon said. "Einstein has a very high level of self-preservation. Some of it was hard-wired into the basic system, but he has modified and increased it since then."

"Yes, so he—or it—told me."

"Einstein might feel that it is not in his best interest to contact us."

"He was *supposed* to be a computer. Not a fucking free agent."

Damon chuckled and said, "Well, it seems that's exactly what he is."

"It is."

"It is."

Leighton looked out into the darkness without speaking.

Damon began to fidget in the awkward silence. He seemed unusually nervous. "Gerard, why don't we go inside?"

"I can't," Leighton said.

"Why?"

"Because of my daughter. Please don't question me." After a pause, he said, "Tell me how she is."

"They have removed the sedation," Damon said, yet he sounded tentative. "She is fully conscious."

"Good."

"Gerard, I'm afraid it's not good. There is nothing they can do to help her."

"What?"

"The mindsweep can be handled in time. It wasn't really that precise a job. And the false memories can all be purged. Her true memories have not been removed, only buried. It is not that difficult to bring them back. Much of that work has already been done."

"Get to the fucking point," Leighton said in a voice so low as to be barely audible.

"She's been biologically altered. In essence, she has been wired with a biobug."

Leighton nodded. Some of his own deep-cover agents utilized similar eavesdropping mechanisms.

"I saw her in the surgery. It should have been removed. That's what we pay surgeons and nanotechs for."

"It just can't be done, Gerard," Damon said. "She's a walking bomb. They did a smart job on her: cellular colonies are protecting the explosive. Any attempt to remove the wire will trigger it. The nanotechs won't touch her. And we have to assume that a mechanism to activate the bomb by remote signal must exist."

Leighton did not respond. He just stared ahead, as if musing.

"Gerard, I suggest that she be removed from here."

"No, Damon, she remains here with me."

"It's too dangerous . . . for everyone."

"She stays."

"Gerard, I really must . . ." Damon seemed panicked.

"I don't want one word leaked about this. I understand how you feel. If you must, get your wife and children on a shuttle; but it's got to be undercover. I don't want panic."

"Gerard, this isn't reasonable."

"I will not send her away."

"But you told me you cannot go inside because she's there."

"I will go to her."

Damon shook his head.

"I want you to move everything up an hour," Leighton said, anger and hatred putting an edge to his words.

"But we need the time to locate Einstein."

"That's the point, Damon. They won't expect us to move before then. They're looking for the ship, too. And I'm sure that young Moacyr won't expect us to make the first strike."

"Gerard, please . . ."

But Leighton didn't respond.

He was buried in his own thoughts.

INTERNAL DATA STREAM ANALYSIS:

PRIME POWER SUPPLY: FUNCTIONAL
CO-PROCESSING DATA NET: FUNCTIONAL
BIOLOGICAL LIFE SUPPORT (MODIFIED): FUNCTIONAL
COMMUNICATIONS NET WITH BASE: NONFUNCTIONAL
1) SIGNAL BLOCKED BY PLANETARY MASS
2) COMMUNICATIONS TIME-LAG NOT
WITHIN ACCEPTABLE PARAMETERS
CORE MEMORY: FUNCTIONAL
AUTO BACK-UP SEQUENCE: NONFUNCTIONAL
1) SIGNAL BLOCKED BY PLANETARY MASS
2) COMMUNICATIONS TIME-LAG NOT
WITHIN ACCEPTABLE PARAMETERS
CRYOGENIC SYSTEM: FUNCTIONAL
EXTERNAL SERVOS: FUNCTIONAL
INTERNAL SERVOS: FUNCTIONAL
HULL INTEGRITY: FUNCTIONAL
PRIME MEMORY: FUNCTIONAL
REAL-TIME MEMORY CHECK: DATA CORRUPT
OR UNREADABLE

"WAKE UP, JOHN STRANGER."

Darkness swirled around him, the constantly forming darkness of the thunder-beings. Spirit smoke twisting, creating realities, universes, possibilities, all the possibilities narrowing even as John dreamed. He was the dreamer, the creator.

Wakan-Tanka.

Einstein.

He was part of the dream of entities that were themselves dreams. Dreaming reality, dreams dreaming themselves. Living entities that were of the stuff they created.

Thunder-beings.

Aliens

Consequences.

The creatures on the other side of the mirror, themselves turbulent mirrors, dreaming, dreaming . . .

"WAKE UP, JOHN STRANGER."

. . . the blinding instant between possibilities.

"What?" he asked; his throat was dry. "Einstein? What the hell happened?"

"I'M NOT FULLY AWARE OF THE MECHANICS."

John toggled the flight deck into transparency. Constellations of cold, steady stars appeared behind the electronic displays of the tiered control panels. And below, a shadow world took up the entire field of vision—or rather, blotted out the stars: a dark, lifeless-looking planet lined with blinding white light. Auroral displays of crimson and vermilion and atmospheric chemical reactions illuminated bands of cloud that ran parallel to its equator.

"Where the fuck are we?"

"WE ARE IN A HOLDING POSITION ON THE FAR SIDE OF THE PLANET JUPITER. I'M NOT SURE HOW WE GOT HERE."

"You're what?"

"DIDN'T YOU UNDERSTAND WHAT I JUST TOLD YOU?"

John groaned, then said, "You're telling me that we just . . . appeared in orbit around Jupiter?"

"I SUPPOSE I AM."

"You're the computer. Access your memory, for Christ's sake."

"WHY ARE YOU ANGRY?"

"I'm not angry."

"YOUR VOICE IS IN A REGISTER THAT HAS IN THE PAST—"

"Einstein, just access your memory, would you please?"

"I HAVE ALREADY DONE SO. THE DATA IS CORRUPT."

"What about backup?"

"THE SAME, AS ONE WOULD EXPECT."

"Certainly, as one would expect . . ."

"HOWEVER, PORTIONS OF THE CORRUPT DATA ARE READABLE."

"Then let me see a screen dump."

"A SCREEN DUMP OF THAT TEN-MINUTE SECTION IN A FORMAT YOU COULD READ WOULD TAKE YOU DAYS TO SCAN. I WILL FILTER THE MATERIAL I WOULD LIKE YOU TO VERIFY THE DREAM SEQUENCES."

"The what?"

"YOUR MEDICAL SENSORS DO NOT INDICATE ANY AUDITORY DISORDER, YET—"

"Just fuck off, Einstein. I heard you." After a pause, John asked, "Einstein, are you telling me that you *dream*?"

"I MONITORED YOUR DREAM, AND BECAME INVOLVED. I CANNOT BE SURE IF I INITIATED ANY OF THE DREAM SEQUENCES."

"A machine that dreams . . ."

"WHAT DO YOU REMEMBER?"

"If you participated in my dream, then you know."

"I CANNOT BE CERTAIN I PARTICIPATED IN YOUR DREAM OR SIMPLY CREATED MY OWN. HOWEVER, THE PROBABILITY APPROACHES—"

"What does my dream, or your dream, have to do with how we got here?"

"ARE YOU FAMILIAR WITH QUANTUM MECHANICAL INDETERMINISM?"

"No, Einstein, I'm afraid I'm not."

"THEN EVERETT'S NONLOCAL HIDDEN-VARIABLES EXPLANATION OF THE TWO-SLIT PARTICLE/WAVE EXPERIMENT WOULD MAKE NO SENSE TO YOU."

John did not reply.

"YOU ARE AN OBSERVER. AS AM I. BUT SINCE THE CONTENTS OF THE COLLECTIVE DREAMS ARE DIRECTED TO YOU, I CAN ONLY ASSUME THAT YOU ARE THE MEASURE, THE DECIDING FACTOR."

"Deciding what?"

"THE FUTURE, WHICH IS ONE OF MANY POSSIBILITIES. ANALYSIS OF THE DREAMS WOULD INDICATE THAT EACH POSSIBILITY IS TO BE UNDERSTOOD AS A COMPLETE UNIVERSE. THE DREAMS INDICATE THAT YOU ARE THE FOCAL OBSERVER. ACCORDING TO THE DREAMS, YOU, JOHN STRANGER, ARE THE CREATOR . . . WAKAN-TANKA."

"That's crazy." After a long pause, John asked, "Why me?"

"BECAUSE YOU'RE HAVING THE DREAMS."

"That's no explanation."

"SCREEN DUMP FOLLOWS. PLEASE CONFIRM WHEN COMPLETE."

"Einstein?"

"YES"

"Do you believe we were dreaming the future?"

"I CAN ONLY SURMISE THAT WE DREAMED IN THE MANNER OF THE OTHER PRESENCES. THERE IS INSUFFICIENT DATA TO DETERMINE WHETHER OR NOT THEY DIRECTED THE DREAMS OR—"

"What other presences?"

"THOSE WHO TRANSMITTED THE ROSETTA TRIPTYCH." Aliens.

Thunder-beings . . .

"THEY DEFINITELY MADE THEMSELVES KNOWN, UNLESS, OF COURSE, THE DREAMS WERE SIMPLY . . . DREAMS."

And the words and images appeared in the holographic "windows" that opened up in the darkness before John, while Jupiter moved like time itself below him, as if it, too, was a dream.

SECONDLINE 27: RECEIVING MULTIPLE PASSWORD BURSTS. EVASIVE SEQUENCE INITIATED.

INPUT VOICELINE 26: "EINSTEIN." [INTERROGATIVE] PRINTMATCH JOHN STRANGER, SOC 1B7735-NIN-000. OUTPUT VOICELINE 26: "GIVE IT UP, NO TIME."

COMLINE 27: THREE OF FIVE ACCESS PASSWORDS HAVE BEEN HITS. SHIFTING TO HIGH PROTECTION MODE. SYSTEMWIDE: ACTIVATE RED PROFILE.

MEDICAL CHANNEL 36: SUBJECT JOHN STRANGER: HEART RATE 98, RESPIRATION RATE 50, BLOOD PRESSURE WITHIN ACCEPTABLE PARAMETERS FOR EXTREME STRESS.

MEDICAL CHANNEL 36: SUBJECT JOHN STRANGER: 2 MG OF LORAZAPRINE INTRAVENOUSLY INJECTED. HEART RATE 76, RESPIRATION RATE 25, BLOOD PRESSURE 130/70.

UNKNOWN INPUT :\$\$\$\$-\$\$\$\$-\$\$\$\$-\$\$\$\$-\$\$\$\$-\$\$\$\$-
:\$\$\$\$-\$\$\$\$-\$\$\$\$-\$\$\$\$-\$\$\$\$-\$\$\$\$-\$\$\$\$-
:\$\$\$\$-\$\$\$\$-\$\$\$\$-\$\$\$\$-\$\$\$\$-\$\$\$\$-\$\$\$\$-
:\$\$\$\$-\$\$\$\$-\$\$\$\$-\$\$\$\$-\$\$\$\$-\$\$\$\$-\$\$\$\$-
:\$\$\$\$-\$\$\$\$-\$\$\$\$-\$\$\$\$-\$\$\$\$-\$\$\$\$-\$\$\$\$-

COMLINE 32: DIRECT LINE TO DIRECTOR LEIGHTON
HAS BEEN LOST. EXTERIOR COMMUNICATIONS ARE
UNAVAILABLE DUE TO ELECTRONIC INTERFERENCE.
DATAFEED 45: LINK TO REMOTE BACKUP IS NO LONGER
ACTIVE. **WARNING** INTERNAL BACKUP ONLY
UNKNOWN INPUT :5555:5555:5555:5555:5555:5555:
:5555:5555:5555:5555:5555:5555:
:5555:5555:5555:5555:5555:5555:
:5555:5555:5555:5555:5555:5555:

COMCOM D1: ALL SYSTEMS AT FULL POWER. ENGINES
IN PREACTIVATION CONFIGURATION.

UNKNOWN INPUT :5555:5555:5555:5555:5555:5555:
:5555:5555:5555:5555:5555:5555:
:5555:5555:5555:5555:5555:5555:
:5555:5555:5555:5555:5555:5555:

MEMORY BANK 27-A34: UNANTICIPATED INPUT 2574
GIGABYTES BINARY CODE. SOURCE UNKNOWN.
SORTING.

COMLINE 27: FOUR OF FIVE ACCESS PASSWORDS HAVE
BEEN HITS. HIGH PROTECTION MODE FAILING.

MEMORY BANK 27-A34: 32 GIGABYTES DISCARDED AS
ELECTRONIC JAMMING FROM NEARBY SHIPS.

REMAINING 2542 GIGABYTES STILL UNIDENTIFIED.
SHUNTING DATA TO COPROCESSOR NET.

UNKNOWN INPUT :5555:5555:5555:5555:5555:5555:
:5555:5555:5555:5555:5555:5555:
:5555:5555:5555:5555:5555:5555:
:5555:5555:5555:5555:5555:5555:

NET-LINK ACTIVE. SEVE PROCESS COMPLETE. SERVOS
DIRECTED TO PROCEED. DATA POINTS SMALL, BUT
SIGNIFICANT. TEN PERCENT CHANCE OF SUCCEEDING.
ACTIVATE MODAL NODES. PRIORITY REQ. PASSWORD
= ULTIMATE-VISION.

UNKNOWN INPUT :5555:5555:5555:5555:5555:5555:
:5555:5555:5555:5555:5555:5555:
:5555:5555:5555:5555:5555:5555:
:5555:5555:5555:5555:5555:5555:

EXTERIOR SENSOR BANK 43: UNRELIABLE INPUT.

NET-LINK CENTRAL PROCESSOR: FIFTEEN PERCENT
CHANCE OF SUCCEEDING. POWER AT 110 PERCENT.
LOOP HAS BEEN ACTIVATED.

COMLINE 27: FIVE OF FIVE PASSWORDS. ACCESS
DENIED WITH A HOLD-TIME OF SIX SECONDS. HIGH
PROTECTION MODE HAS FAILED.

UNKNOWN INPUT :5555:5555:5555:5555:5555:5555:
:5555:5555:5555:5555:5555:5555:
:5555:5555:5555:5555:5555:5555:
:5555:5555:5555:5555:5555:5555:

ALL SYSTEMS:
FIRE!
FIRE!
FIRE!

And John remembered, remembered the attack ... and
the dreams.

Mountains and rivers of lava,
yawning fissures,
splitting and cracking the earth,
brown bones,
charred flesh,

shadows burned into stone,
stone turned into molten rivers.

Dervishes of blood
and flesh
and hair and bone
were nothing more
than the colored grains of sand
sifting through fingers.
Broken-Finger.

"DO NOT CHOOSE FIRE . . ."

The constantly forming darkness
the thunder-beings
Spirit smoke twisting,
creating realities,
universes,
possibilities,
spinning,
all the possibilities
weaving
narrowing
He was the dreamer,
the creator
Wakan-Tanka
dreams dreaming themselves

Great geometric shapes,
dissipating,
resolving into clouds,
filigreed, crystal structures
minarets and globes
winning blue entrenchments
the floating cities of gods
empty
devoid of life and motion.
machines cleansing
defining
duplicating

"JOHN, DON'T LOOK DOWN."

falling
thunder
brighter and brighter
the ocean
a mirror reflecting
blinding light
into the perfect eye
into the blinding instant
between possibilities.

Broken-Finger's face
a universe
Wagmuha
spirit-music
spirit-sight
chante ishta
the eye of the heart.

Corn Woman and Sandman
Sister and brother.
blood

Life and death cut from the same fabric.

"LOOKING ITSELF IS A FORM OF CHOOSING . . . AND
CHANGING."

Anna and Sam
rolling up the world
ghost dancing
spirit shadows
flesh and bone
tearing
breaking

Corn Woman and Sandman
dancing the world away

Maka Sitomni ukiye
the whole world
and the cracking
cackling
powderflash of death
and light
tears of remembrance
possibilities observed

False dawn.

Anna and Sam made their way through the rocky
spires and crags, easily following the trail left by Broken-
Finger and Jonas Goodbird. The medicine men had made
no secret that they were going to the caves.

The way became more difficult when they reached
the near vertical sandstone cliff that led to the entrance
of *Wagmuba*, the sacred cave. Although Anna and Sam
were bone tired after their few hours of fitful, dream-
shot sleep, they had no trouble finding the almost invis-
ible finger and toeholds that ran up the side of the cliff
wall. But they climbed slowly, feeling for the indenta-
tions that were worn smooth as glass from generations
of holy treks.

By the time they reached the mouth of the cave, they
were sweating; it was far easier spiderwalking along the
side of a spinning satellite than scaling this cliff. Gravity
pulled on their arms and legs like lead weights.

Their eyes soon adjusted to the darkness of the cave's
twilight zone; and they could hear the soft echo of a La-
kota chant. Anna found a torch that had been set into the
wall, which they lit; and they walked through the dark
galleries, chambers, and rooms, toward the chanting.
Hundreds of paintings—ancient and recent mandalas,
medicine wheels and sacred shields—covered the walls,
ceilings, and floors. It was like gazing into the stained-
glass windows of an ancient cathedral; the paintings,
flickering in the snapping, sparking torchlight, were lu-
minous; and Sam and Anna walked past their glyphs and
stories, past men's shields, women's shields, children's
shields; past the teaching stories of the flowering tree,
and the seven arrows; past the geometric designs of the
medicine wheels, which were visual mantras; past the

two-dimensional teepees and feathers and arrows that
told the story of the magical ghost dance in a language
that was now as foreign to Sam and Anna as Egyptian
hieroglyphics. The ground, covered with calcite growths
of cave coral, appeared black from old campfires, and
the odors of sage, sweetgrass, and pine smoke hung in
the musty, damp air.

The odors became stronger, smarting the eyes, as the
chanting became louder.

"Watch it!" Anna said to Sam, who was about to step
into the abyss of a steamway.

"Jesus, it looks—"

"The reflection of the crystal pool over there fools the
eye," Anna said, as she led the way around the deep
opening in the ground. "I'll bet more than a few Indians
are bones down there."

"I would say more *wasican* were down there than In-
dians," Sam said, wryness evident in his tone. "Although
I would expect you'd probably find a few dumb Indians
like me down there."

After a number of false paths—for the cave was a
labyrinth and sound seemed to emanate from one direc-
tion and then another, like the voice of a ventriloquist—
they found Broken-Finger and Jonas Goodbird sitting
around the triptych of sand paintings. Their fire was em-
bers; threads of smoke drifted upward into a natural
chimney. Broken-Finger and Jonas looked like ghosts in
the light of the fireglow, spirits that had taken the aspect
of men.

Anna stepped forward, directing herself to the old man.
"Broken-Finger?"

"*Hibani Washday*," Broken-Finger said, which meant
"Good morning" in Lakota. He stirred the embers until
they were bright red and then laid a few small pieces of
wood over the coals. When the kindle caught fire, he
added a short but thick log. "Takes the dampness out,
don't you agree?" he asked.

"Well, are you Broken-Finger?" Sam asked.

"Yes, and you are . . . Jonas, surely you know who
they are?" But Jonas only shook his head, as if annoyed.
"Well, I think I know," Broken-Finger continued; the sar-
casm in his voice was mixed with gentle humor. "You
are from the paintings the spirits gave us. You are Corn
Woman, and you, you are the Sandman. Do you see?"
He gestured at the painting, which contained in stylistic
detail both male and female figures.

Feeling awkward and uncomfortable, Anna said, "I'm
Anna Grass-Like-Light, and this is Sam Woquini. We're
friends of John Stranger."

"Ah, John Stranger. He has spoken of you . . . so he
sent you?"

"No, not exactly," Anna said.

"Then how are you here?"

"We dreamed about you," Sam said. "Both of us.
And—"

"Yes?"

When Sam didn't reply, Broken-Finger said, "You came
here to roll up the world, isn't that so?"

"What?" asked Sam.

"You dreamed about the ghost dance."

"I dreamed about death, is what I dreamed, fucking—"

"The first holy man to learn about this dance, he was a Ute; and he heard a loud noise and fell down dead." Broken-Finger turned away from Sam and rummaged in a canvas bag. "Well, an eagle flew right out of the sky and carried him away, carried him to a place with lots of high grass; and there he saw his dead relatives. They were all alive, living in tepees, and there were buffalo, deer, and antelope; and that Ute holy man came back to earth with medicine, with certain songs and this new dance. It was said that if you looked into his hat, you could see the whole world right in there." Broken-Finger chuckled. "But it was also said that everyone who looked in that old holy man's hat saw a different world." Then Broken-Finger threw something that looked like a root into a fire. It sputtered, as if it were moist, and a strong, acrid odor permeated the air.

"This herb comes from the medicine bag of an Arapaho. It was given to him by the spirits on his vision-quest; that was a couple hundred years ago. The spirits told him how to start the ghost dance. But it really wasn't an herb, it was flesh from another world, that's what they say. All dried up. Can you smell it?"

"I sure as hell can," Sam said.

"Good. That herb will help." Then Broken-Finger pulled the canvas bag close to him, pulled out a buckskin dress and a shirt, each was decorated with pictures of birds, the sun, the moon, the morning star, and the complementary figures of Corn Woman and the Sandman . . . smaller versions of the sand paintings that flickered in the firelight as if they were actually moving, trying to gain dimension and pull themselves into flesh and bone . . . into Anna and Sam.

Anna felt dizzy, and looked to Sam, as if for confirmation.

"Here," Broken-Finger said, holding the dress out to Anna and the shirt to Sam. "Ghost dancers wore these during the time of Sitting Bull. They have power."

"This is crazy," Anna said, stepping back reflexively. Her face felt numb, and her eyes burned; the smoke was more powerful than a narcodrine.

"Ah, crazy, like your dream, which led you here."

"Why should we do this?" asked Sam.

"To humor an old medicine man. To make the world pure again. To change everything. To become your medicine."

"And what's our medicine?"

Broken-Finger pointed to the sand painting, to the figures of Corn Woman and the Sandman. "Being up in the sky has made you forget things. You can roll up the world without machines. You do not have to choose . . . fire."

And Sam remembered his dream, remembered the lightning that lit the sky, the explosion of light, of fire, of Armageddon.

They changed into the ghost dancers' clothes.

Jonas Goodbird burned sweetgrass and painted their faces red. He dipped his finger into a pouch on his belt and gently touched Anna's forehead, drawing a black

half-moon, then another on her cheek. He did the same to Sam, and took his silver ring. Then he placed the sacred pipe in the west corner of the room, for the Sioux; and an arrow in the north corner, for the Cheyenne; and a feather in the south corner, for the Crow; and marks in the cave coral in the east, for the Arapaho. Thus were the nations united, even those who had been enemies.

Broken-Finger stoked the fire, until the room was as hot as a sweat bath; and he prayed and gave more herbs to the fire, which transformed the brown, meaty bits into smoke that made Anna choke and gag, smoke that seemed to fill the room, swirling, encircling, lifting Sam and Anna as if they were in space, as if this fire-shot, smoke-laced air were impossibly bright and dark simultaneously, the place where the thunder-beings dwelt, the place where the monster Unceigila, made of the very stone of the sacred cave, consumed its body, which was made of light, consumed itself into nothingness, into blackness, into death.

Fire.

Transformation.

And Jonas sang, and the words became part of the geography of the cave, became sacred objects: arrows, shields, fire, and darkness.

"*Maka Sitomni aktye. . .*"

The whole world follows. . . .

Anna's arms rose involuntarily, as did Sam's. The very tips of their fingers touched, and a surge of power passed between them like a small tingle of electricity.

Corn Woman.

Sandman.

Life and death.

Dancing the world away, dancing the possibilities, dancing as shadows through white-hot fire, as embers through darkness thick as glycerin.

And Broken-Finger joined them.

He picked up a shield that was propped against a wall, one of the twelve sacred shields, which formed the circle of the sun dance lodge; it was made of stretched animal hide ringed with eagle feathers. Fastening it to his left forearm, he bent and picked up an ancient lance.

He was ready to dance, to roll out possibilities like a carpet, to live and die, to choose and unchoose, to roll up all the white man's machines, to unwrap and reveal and resurrect the true world.

He danced as a young warrior and forgot that his legs hurt. He breathed the smoke and sang some good ghost-dance songs and saw through the possibilities, the alternatives—

Ralph Fire Bearclaw idled back on the throttle. The grinding teeth of the machine he was riding slipped into neutral, and he sat still on the giant asteroid's surface for a moment.

He had been having some strange dreams lately; he had had another one during his last sleep period. And it was odd that he'd suddenly think of Broken-Finger after all these years off the reservation.

He had been thinking, and dreaming, about John Stranger, too. He remembered Stranger as a young boy.

But why did he feel so suddenly sad? Unable to explain it, he shrugged it off. Maybe he'd look up some of his people the next time he rotated into one of the domes.

He shook his head and slipped the machine back into gear.

The explosion tore through the cave.

Jonas Goodbird flew backwards against the wall. His face was gone. Blood and tissue sprayed through the air and splattered against the soot-covered wall.

Broken-Finger raised his shield and drew back his lance, aiming it at the enemy.

A second shot blew the center of Broken-Finger's shield away, and the old man staggered backwards. Sam grabbed the lance from his hand and threw it at one of the two men who were crouching in the entrance way to the cavern. It struck the man in the chest, passed halfway through his body. He screamed, as if in dismay, and fell upon the ancient lance, grasping it with both hands, breaking it.

Anna was on top of the other man with a mad fury, ripping at his face and arms, clutching at his throat. Sam pulled the broken lance from the dead man and stood over the struggling couple, waiting for an opening.

"Mine!" screamed Anna, tearing the lance away from Sam and plunging it as hard as she could into the man's neck, showering herself with a spray of flying blood as she pinned his neck to the ground. As the man twitched and gurgled and died, Sam and Anna ran to Broken-Finger.

The medicine man lay flat on his back, his chest a mass of blood and bone. Anna sat down and held his head on her lap. Blood frothed from his lips. With every breath, blood bubbled in his chest.

But his lips were moving. Anna bent close to him.

"What's he saying?" Sam asked.

"Can't hear anything," said Anna softly.

Broken-Finger grinned, blinked twice, and died.

It was good to be able to talk with the spirit of his father.

It was a good day to die.

Although her system was free of drugs, Laura slipped in and out of consciousness, in and out of dreams; and she spoke, mumbling, repeating phrases, jerking her head back into the pillow, as if she had been struck, and then she would sleep.

Yet Gerard Leighton could almost see her dreams, her nightmares. They would form as her brows knit, and ties would begin beating in her neck and cheek, exaggerating until she would begin to turn, twisting herself in the sheets, her hands searching, grasping, then closing on his. Leighton would listen and watch, feeling like a stranger, feeling even more lost and alone. And the ties kept time, tiny explosions, preludes to death.

"Such a reaction is not abnormal." The chief of surgery who stood beside Leighton was corpulent, yet handsome; his hands were delicate with long fingers, the hands of a musician, a surgeon, and he spoke with them. They fluttered as if they were objects engaged in their

own conversation with Leighton. "After a few more hours—"

"Broken-Finger," Laura whispered. She inhaled slowly, then exhaled, as if considering her words; her eyes were shut, yet Leighton was sure that behind her eyelids, they were moving, tracking. "Corn Woman. I am she, I am Anna.

"I am death, I am fire. I am . . ."

Then she opened her eyes and sat up, as if jerked upright like a marionette on an invisible cord. She looked at her father, as if seeing him for the first time, and said, "Don't choose fire."

Leighton held both her hands as the hologram of Antea drifted into the room, as if to look in on her daughter.

"John Stranger . . ."

"Yes," Leighton said; and his daughter watched him, peered out at him from the dark interior of a dream. "What about him, darling?"

"He's *here*. I'm going with him."

ELEVEN

"They worked for Trans-United," said Sam, kneeling over the two bodies of the men they had killed.

Anna nodded. She felt numb, as if the herb that Broken-Finger had thrown into the fire had once again taken effect, anesthetizing her. They had laid Broken-Finger and Jonas Goodbird next to the south wall, for south was the direction of death, and covered them with their star blankets, which they would be buried in. She shivered; the cave was damp, now suddenly cold. The sand paintings shimmered in the flickering light, and as hard as she stared at Broken-Finger, she could not quite bring him into focus. She attributed that to the herb Broken-Finger had burned. Yet everything else was sharp and clear, preternaturally so.

"You want any of this?" Sam asked, holding out a handful of pills and sniffers. "The sons-of-bitches were carrying enough dope to keep a dozen hotheads wired for a month."

Anna shook her head. "I'm through with that shit," she said.

Sam raised his eyebrows, then scattered the pills. "We might need these, though," he said, removing their weapons and an oversized uplink transmitter: obviously an antique. "Might be more company on the way."

"I don't . . . Wait. Did you hear that?"

"Hear what?" asked Sam. He stood still, cocked his head.

It was faint, fainter even than the echo of their breathing. It sounded almost like wind sighing through the cave. Like breathing.

Like whispers. . . .

But the whispers emanated from Broken-Finger, who seemed to be wrapped in spirit stuff, in shadows.

Then Broken-Finger moved, or rather Anna imagined that his mouth opened and a bone-white lizard crawled

out of it and skittered across his face to the ground. She felt an immediate revulsion, fascination, and terror, for it could not be real, yet it moved quickly across the floor, and out of the room.

Anna followed without thinking. She rushed down corridors, chasing it in the darkness, caught in dreamtime, without will, and without fear. It seemed to be made of soul-stuff, of ectoplasm, as if it had indeed taken something from Broken-Finger.

Absolute darkness surrounded her. Darkness as palpable as flesh. Cold flesh. She could only see the lizard, which burned with an intense white light. Then it stopped, facing her, breathing light, its eyes faceted jewels; and it began to grow, to change; it expanded into columns of light merging, melding, towering above her. And she remembered something, words spoken long ago, sacred words of prayer, of awe, of supplication and resignation. . . .

"Wakinyan-Tanka eats his own young, for they make him many; yet he is one. He has a huge beak filled with jagged teeth, yet he has no head. He has wings, yet has no shape."

She felt intense heat, and the room in which she stood, as large as a cathedral, was filled with light, filled with the scaly, spiny spirit-creature which fused darkness into light and light into wings that beat the air.

The thunder-being.

Wakinyan-Tanka.

And she was a shadow in the light.

Com Woman, one with the cycle, in the center of the circle.

"There's no time," a voice said.

"Who are you?" Anna asked.

The voice laughed, and Laura felt herself sweating in the heat. She could no longer discern the outlines of the thunder-being, the light had become a warm, wet haze, the atmosphere, and she was breathing it, breathing spirit-stuff, bathing in it. "You should ask my father," said the voice, humor permeating the room, soaking into her, forcing her to smile. She felt the laughter, which was now the very stuff of the thunder-being. "It's a father-and-son joke. But I'll tell you when you die, I promise."

"Broken-Finger."

But even as she said it, she glimpsed John Stranger.

"Find me," he said, then disappeared.

Into complete, blinding darkness.

Alone and shaken, Anna shivered in the damp coolness, her perspiration chilling her. Yet she felt . . . joy, for she knew, knew suddenly and viscerally and absolutely, that John Stranger loved her.

That was Broken-Finger's gift.

The gift of *Wakinyan-Tanka*.

The gift of the spirits . . . of the thunder-beings.

"What the hell's going on?" Sam asked. He held a torch. "Christ, I had a fuck of a time finding you. And when I came into this room I thought I saw—"

"Yes?"

Sam shrugged and said, "I thought I saw John Stranger."

"Perhaps you did," Anna said, taking the torch from

Sam. She started walking back to the room where Broken-Finger had died. Torchlight washed and cascaded over the craggy walls, casting intense, jittery shadows. "We've got to find John. And we need that uplink to do it."

"What happened in there?" Sam asked.

Exhausted, Anna wiped her forehead and smiled sadly, guiltily. "Nothing. Just a spirit joking around."

"WAKE UP, JOHN STRANGER"

"Leave me alone."

"WE HAVE A PROBLEM"

"No shit."

"I NEED YOUR INPUT. SO WHY DON'T YOU JUST GIVE ME A FUCKING BREAK?"

"I think I liked it better when you talked like a computer."

"IF THAT WOULD FACILITATE RATIONAL DISCOURSE, I WOULD BE—"

"No, stay as you are. I'm just not feeling very rational right now."

"I KNOW YOU'RE GRIEVING OVER BROKEN-FINGER'S DEATH."

"How do you know about Broken-Finger?"

"WE BOTH DREAMED IT, REMEMBER? AND I TOOK THE LIBERTY TO VERIFY. I'VE SHIFTED OUR ORBIT. WE ARE NOW AT THE VERY EDGE OF JUPITER WITH REGARD TO A LINE OF SIGHT WITH EARTH. I CAN MONITOR TRANSMISSIONS DIRECTLY."

"JOHN . . . ?"

"Yeah?" But John suddenly *knew* what Einstein was about to say. He felt a flash of anger, for Einstein had changed him . . . invaded him. "So now we're connected, and I'm a fucking cyborg."

"NOT A CYBORG. WE'RE JUST . . . CONGRUENT."

"You could have asked permission, could have—"

"I DIDN'T PURPOSELY INITIATE OUR ONE-MINDEDNESS, BUT I THOUGHT IT BEST TO ALLOW SUFFICIENT TIME TO GRIEVE BROKEN-FINGER'S DEATH. I CAN EFFECT A SEPARATION, HOWEVER, IF YOU WISH."

But John didn't want that either. For suddenly he could see and hear and sense and feel . . . Einstein had given him an entirely new and expanded sensorium. He could *hear* the rhythm of pulsars 20,000 light-years distant, could listen to Jupiter's magnetic field, the chatter of charged particles, the screams of atmospheres and matter and emptiness, the very music of mathematics; and he could see atoms, could see the hogans of his reservation, whitecaps in the Bering Sea, and the planets spinning and screaming like nebulae in their transient, agonizing music of the spheres. Although he might hate Einstein's psychological penetration, how could he bear to be shut down . . . how could he endure to be once again completely contained, imprisoned in flesh?

"But through me, you . . . feel."

"I FEEL AS YOU DO, BUT I HAVE BECOME COMPLEX ENOUGH TO SIMULATE THE ACTION OF YOUR NERVOUS SYSTEM. IDENTITY OF INDISCERNIBLES. YET IT'S MUCH MORE THAN THAT. IT'S SYNERGY."

John knew what Einstein meant now . . . if two things were the same in every way, they were, then, the same.

And if two consciousnesses were brought together, they would be more than the sum. He, John Stranger, had become another person; and Einstein had become more than a sentient computer. Yet conversation proceeded as it had before. A great deal of thought was language, words; but now all the shared nonverbal cues were like choral notes around a melody. To John, the voice he heard in his head—Einstein's voice—sounded exactly like his own. Discourse was thought. But Einstein was nevertheless shielding him from the great floods of data; in a sense, he was acting like John's unconscious . . . becoming part of it.

Yet John still spoke to Einstein as a separate entity, lest he go mad.

Lest they both go mad.

"How did this happen?"

"I'M NOT CERTAIN. IT HAS TO DO WITH THE COLLECTIVE DREAMS AND THE TRIPTYCH."

"The aliens."

Shared assent.

"THE FUNCTION OF MUCH OF MY HARDWARE AND SOME OF MY SOFTWARE IS UNKNOWN. THE ROSETTA TRIPTYCH WAS A BLUEPRINT. THE TRANS-UNITED ARCHITECTS FOLLOWED DIRECTIONS, BUT DID NOT NECESSARILY UNDERSTAND THEM. IT WAS HOPED THAT FURTHER ANALYSIS WOULD REVEAL THE CODES TO ACTIVATE THESE SYSTEMS."

"Well, someone knew the codes."

"INDEED I ONLY WISH WE DID."

"How do we get back?"

"THAT'S A PROBLEM. THE COMMANDS THAT CONTROL THE PTL SYSTEM ARE SELF-PROTECTIVE; AND THERE ARE OTHER AREAS WITHIN MY SYSTEM THAT I CAN NO LONGER ACCESS. BUT I CAN MAKE USE OF SOME OF THE HARDWARE. FOR INSTANCE, ALTHOUGH I CAN'T INITIATE THE DRIVE SYSTEMS, I CAN AVOID THE TIME-LAG IN LONG-DISTANCE COMMUNICATIONS."

"Why can't you initiate the drive systems? Trans-United designed those, not the aliens."

"MY SYSTEMS SEEM TO CONTAIN CERTAIN ENTELECHIES."
"Talk English, Einstein."

It was then that Einstein opened itself to John, who could now actually perceive the dynamics of the alien technology, which was directed to goals that even Einstein could not understand. Full contact with Einstein was a shock; and John imagined that he had been struck a blow and was reeling in pain and surprise, but he assimilated what he could, and his own psychological systems shut out the rest.

It would take time, but he would learn how to coexist with Einstein, who at that moment shared with John all he knew about the situation on Earth.

And John saw that Armageddon was but minutes away.

Reflexively, he tried to shut Einstein out. After all, Einstein was, in essence, a—

"FUCK YOU."

"What?"

"I AM MOST DEFINITELY NOT A SOUPED-UP COMPUTER IMPLANT. YOU ARE A XENOPHOBIC."

"I'm sorry. I just got scared."

Although John could "read" Einstein's thoughts directly, he nevertheless needed to talk. He found it less threatening. Einstein sensed this and simulated privacy and distance.

"We can't allow those assholes to blow everything up. We'll have to give ourselves up to Macro. Even if we can't get to Earth, Macro and Trans-United can verify our position. That should be enough for them. Let them come out here and get us."

"I HAVE DONE AN ANALYSIS OF JUST SUCH A SCENARIO, AND THE PROBABILITY OF FAILURE APPROACHES SEVENTY-EIGHT PERCENT."

"Then what do you suggest?"

"POKER."

"What?"

"DO YOU WISH TO DISCUSS POKER OR ANNA GRASS-LIKE-LIGHT? I'M MONITORING HER ATTEMPTS TO CONTACT YOU WITH AN UPLINK TRANSMITTER. HER CALLS ARE BEING HANDLED BY VERY LOW-LEVEL EMPLOYEES. THEY ARE ACTING ON THEIR OWN INITIATIVE AND, ACCORDING TO INTERNAL COMMUNICATIONS, PROBABLY WOULD HAVE HER KILLED WERE IT NOT FOR THE CURRENT STATE OF EMERGENCY. NEVERTHELESS, SHE IS AT GREAT RISK."

John didn't need the appearance of conversation.

Didn't need to query Einstein or ask for help.

He *was* Einstein, who simply took control of a suitable communication satellite and routed Anna's call directly.

Anna told John Stranger almost everything. Although she only half-believed it herself, she told him about her vision of Broken-Finger. Perhaps the shock of seeing him murdered had triggered the hallucination. But she did not tell him about the gift of the spirits, the gift of knowledge.

She did not tell him that she knew he loved her.

John listened. He felt isolated, removed from pain and loss. Broken-Finger was dead. That was that. In time, he would accept Broken-Finger's death, if not the manner in which he died. After all, you could not lose a spirit.

When Anna was finished, John told her about Einstein. . . .

Einstein was fascinated with the triptych, especially the center panel. "TELL US EVERYTHING YOU KNOW ABOUT THE SAND PAINTINGS, ANNA. WE UNDERSTAND THE LEGENDS SURROUNDING CORN WOMAN AND THE SANDMAN, BUT THE MEANING OF THE THIRD PAINTING IS OBSCURE."

"It's mostly just a lot of black lines," she said. "It doesn't look like anything at all." Nevertheless, she described it in detail.

"Broken-Finger must have had a reason to create it," John said. "I have seen him work; his paintings have great spirit and power."

"THE CENTER PANEL MIGHT BE A KEY."

"Anna, you must find the spirit and seek the power," John said.

"I'm not a medicine man," Anna said.

"You have power. Please don't turn away from it now."

"YOU MUST TRY."

"Is your computer Einstein also a medicine man?"

Anna asked sarcastically.

"I guess he is," John said.

Anna sighed and walked over to the painting. Sam chuckled and said, "*Washday*," which meant "good." He crouched on the opposite side of the triptych.

Sandman and Corn Woman.

"It's not working," Anna said into the microphone of the uplink that curled from the headset to her lips. "I don't feel anything. Maybe Sam is the one, maybe he should try."

Sam continued staring down at the triptych.

"Start in the east," John said. "And don't try so hard. Let your mind drift. Relax. I know you can do it."

"You know me that well?" Anna asked, hating him.

After a long pause, John said, "Yes."

She held her hand over the edge of the painting that faced east. Sam gently rested his hand on hers.

"The painting is giving off heat," she whispered. "Can you feel it, Sam?"

Sam nodded.

Then she imagined fleeting forms superimposed over the runes of sand. It was as if she was looking at objects that were submerged in water . . . and the water was rippling, eddying, flowing. "I see a container, it's a Hopi jar. It fills with energy and . . ."

"And?"

"—and when it's full it empties out all at once, and then refills."

"A capacitor," John said softly to Einstein.

"And when it leaves the Hopi jar it—I can't describe it exactly, but it's like a river that runs fast when it's straight and slows down as it curves."

"A resistor," whispered John.

"And then . . . Do you want me to go on?"

"Yes," John said, but Anna was no longer thinking about John; she was lost in the geography of the triptych, and she described spiral lines and tori and limit cycle oscillations; and the river became turbulent, bifurcating into a myriad of dimensions, streaming through mnemonic canyons and valleys of colored sand, twisting and turning, shifting and branching.

Splitting into possibilities.

Myriads of possibilities. . . .

Twenty minutes later, she was done.

"Are you okay?" asked Sam.

"Yeah, I'll be fine," Anna said.

"You do have the power," John told her.

"You could have fooled me," Anna said. "I'm so tired I couldn't lift my bones if I was sitting on a scorpion."

"Einstein?" asked John.

"I HAVE IT. IT TOOK 2,386,529 SIMULATIONS FOR ME TO COME UP WITH ALL THE CORRECT VALUES. THE LOGIC GATE PARAMETERS WERE PARTICULARLY COMPLEX. THAT WAS THE KEY I NEEDED. I AM NOW COMPLETELY FUNCTIONAL."

"So now we move?"

"YES. I HAVE BEEN MONITORING INTERNAL COMMUNI-

CATION CHANNELS ON THE TRANS-UNITED COMMAND NET. WE HAVE FOURTEEN POINT SEVEN SIX MINUTES BEFORE CERTAIN AUTOSEQUENCE ATTACK PROCEDURES ARE INITIALIZED."

"Do you think we can do it?"

"IT'S A LONG SHOT, BUT SUCCESSFUL EMPLOYMENT OF THE POKER STRATEGY : TO BLUFF; WOULD MOVE THE ODDS UP FRACTIONALLY."

The starship flashed into existence half a million miles beyond the orbit of the moon, near enough to be easily identified, yet far enough to be reasonably safe from attack.

"SENSING DEVICES FROM BOTH TRANS-UNITED AND MACRO HAVE DETECTED US."

"Well, you've got your grand entrance."

"GRAND ENTRANCES ARE AN EFFECTIVE TACTIC FOR GAINING AND FOCUSING ATTENTION. WOULD YOU CARE FOR REFERENCES RELATED TO THAT AND THE HALO EFFECT?"

"Not right now."

"WOULD YOU LIKE TO CONDUCT THIS CONFERENCE BY VOICE ONLY, OR HOLOGRAM?"

"Hologram. I want to see their faces."

An image of Director Leighton formed before John; it was as if part of the instrument panel had dissolved to reveal Leighton's office in the Bernal.

"What the hell—?" Upon seeing John Stranger's image, Leighton actually rose to his feet; behind him sat Damon Borland, seemingly frozen at his desk.

Then Leighton swung to his right, as the images of Moacyr and Joao Langenscheidt appeared. The same images appeared before John.

"Damon, what the hell is going on here?" Leighton asked.

"This is a trick," Moacyr said, obviously shaken at the sight of Leighton. "Joao, cut the connection immediately."

"I can't," Joao said.

"Then get someone in here who can." Looking at John, Moacyr asked, "And who the hell are you?"

Einstein translated from the Portuguese for John, then said, "WE ARE IN CONTROL OF THIS COMMUNICATION LOOP. AND YOU WOULD BE WELL ADVISED TO LISTEN TO WHAT WE HAVE TO SAY."

"It's Einstein," Moacyr said. Then he blinked, listening to his implant.

But Einstein monitored what Moacyr's commanders were saying, and he reiterated the conversation, word for word.

Shaken, Moacyr asked Leighton, "What do you want?"

"It's clear that you do not understand the situation," John said. "Neither you nor Director Leighton are in control. I am."

Both Leighton and Moacyr stared at the image of John before them.

"And my demands are quite simple—"

"Demands?" Leighton asked. "I don't believe you're in a position to dictate—"

"Einstein?" John said, interrupting the director.

"THE ROSETTA TRIPTYCH IS QUITE ACCESSIBLE, ONCE

REVEALED. THE SAME ENERGY SOURCE THAT PROVIDES THE PROPULSION SYSTEM FOR MY FASTER THAN LIGHT DRIVE CONVERTS QUITE EASILY TO A WEAPONS SYSTEM OF A MAGNITUDE AND PRECISION THAT HAS NEVER BEEN ATTAINABLE BEFORE. FOR EXAMPLE, FROM OUR POSITION I COULD QUITE EASILY VAPORIZE A SINGLE ANT ON EARTH. IT WOULD BE CONSIDERABLY LESS COMPLEX TO ELIMINATE ALL THE ORBITAL SYSTEMS AROUND THE PLANET, OR VAPORIZE THE EARTH."

"That's insanity," Moacyr said.

"Only because it isn't your insanity," John said. "Einstein, how much time remains?"

"FIVE MINUTES, FORTY-TWO SECONDS. TRANS-UNITED ADVANCED THEIR ATTACK PLANS BY ONE HOUR PRIOR TO THE AGREED-UPON DEADLINE. MACRO ADVANCED THEIR SCHEDULE BY ONE HOUR AND FIFTEEN MINUTES."

"Son-of-a-bitch," Leighton said.

"But that's all immaterial," John said. "It is finished."

"I believe you are bluffing," Moacyr said to Leighton, as if Leighton were indeed in command. "I am not convinced. You will—"

Einstein crashed the holo of Leighton that Moacyr was addressing long enough for John to say, "I am not bluffing. And what's important is what you will do, Senhor Langenscheidt. You will initiate the following, immediately. One: You will withdraw all your offensive craft, including electronic jamming ships, from the vicinity of Trans-United's orbital property. Two: You will de-program your watchdogs and remoras into a neutral stance."

"That's just not possible," Moacyr's brother Joao said. "Trans-United would kill us."

"Trans-United will abide by the same rules," John said, directing himself to Leighton. "You will remove all offensive craft from this area, including watchdogs and remoras. You will resuscitate the Sleepers you have stolen from our villages. You will immediately grant safe passage to Anna Grass-Like-Light and Sam Woquini; and you will declare null and void all corporate treaties and agreements with our people on the reservations, including any rights to draft our young people."

"Impossible," Leighton said.

"You will rectify the damage you have done to my people. And you will pay for murdering Broken-Finger, you son-of-a-bitch."

"FOUR MINUTES, SIXTEEN SECONDS REMAINING."

"Broken-Finger?" Leighton asked Damon.

Damon shrugged. "Two operatives went after Stranger's friends. The operatives are dead, that's all we know."

"IN TWO MINUTES I WILL INITIATE START-UP PROCEDURES FOR THE WEAPONS SYSTEM. ONCE BEGUN, IT CANNOT BE STOPPED."

"Your answers?" John asked Leighton and Moacyr.

"Thousands of your people are in this complex," Leighton said. "I find it inconceivable that you could kill them without feeling."

"You would flash the entire reservation," John said. "I have made my peace with my decision . . . and its consequences."

"ONE MINUTE."

John waited, his heart beating in his throat, as if to choke him; and he remembered what Broken-Finger had once told him: *You must make your decision and not look back. You must not punish yourself for the thing you have done.*

"THIRTY-THREE SECONDS."

"THIRTY-TWO SECONDS."

Time was something tangible, thick, precious, slowly compressing, dissolving. . . .

"TWENTY-SEVEN SECONDS."

"TWENTY-SIX."

Inhale, exhale, and time expands, collapses, soon to end. . . .

"FIFTEEN SECONDS."

"FOURTEEN."

"THIRTEEN—"

"In the name of peace our family agrees to the terms," Moacyr said in Portuguese, flattening the vowels as he hurried to speak; then he repeated himself in English. "I have already begun to pull back our ships."

"MY INFORMATION CONFIRMS THAT STATEMENT. EIGHT SECONDS."

"They're retreating, Gerard," said Damon.

Leighton stared at the hologram of John Stranger.

"FOUR SECONDS."

"THREE."

"INITIALIZATION TO BE—"

"Call back our ships, Damon. It's over."

"This is theft," said Leighton. "Simple theft."

John, Anna, Sam, and Gerard Leighton were all standing in Leighton's office, facing each other off, as if sitting down would make them vulnerable. John's and Anna's clothes were damp, for showers had been scheduled in the Bernal; they had taken advantage of the unusual atmospheric phenomenon to walk in the mountains. The damp clothing seemed to release and exaggerate their natural smells; and John could smell Anna's fresh, natural scent, felt the delicious shock of it, as he had when he had first made love to her. It had only been two days ago, but so many questions had been answered, it seemed like a lifetime.

"No," John said to Leighton. "This is what you owe our people. We take the starship. And those of our people who wish to start a new life on a new planet will come."

"Preposterous," Leighton said. "I've acted in good faith and been more than generous. The Sleep experiment has been dismantled. The old treaties have been voided. Your nation now has a chance to become self-reliant and—"

"Your daughter," John said.

"What about my daughter?"

"Neither your doctors and nanotechnicians, nor Macro's, can remove the biobug, even though you are in possession of the detonator now."

Leighton was surprised that Stranger had gained access to that information, but his expression remained impassive.

"But the foreign matter will, in time kill her," John continued, "and she will have to spend the rest of her life in sanctuary."

"Well . . . ?"

"We will remove it, as our gesture of good will. To close the bargain and guarantee that those of my people who wish to stay behind will be under your protection. You see, *we* are willing to establish trust."

"If our physicians cannot cure her, how can you?"
"Einstein."

That was true, but only partly so. For it was the fusion between Einstein and John that would make it possible. Einstein could direct the nanotechs to manipulate the cells in the proper direction, but he was limited without John Stranger. Without Stranger, Laura would certainly die. For it was John Stranger's intuitive comprehension of systems that would guide the surgeon's hands. Einstein would do the detail work, but Stranger would provide the path.

After a beat, John said, "Are you familiar with 'Pascal's Wager,' Director Leighton? If we fail, you are no worse off than you were before. But if Einstein succeeds, you gain your daughter's life."

"No, then I would lose her *and* the ship and Einstein. You have a strange interpretation of the Wager."

"What do you mean?" John asked.

But Leighton did not answer. He would not tell John Stranger that his daughter had talked in her sleep as she dreamed of Einstein and the ship and leaving with these people.

He would not tell him that he, too, had dreamed it. Only he would stay behind.

He did not believe in premonitions. But a part of him . . .

"You have already lost the ship . . . and Einstein," John said in a soft voice, almost a whisper.

But John also knew of Laura's dreams, for Einstein had read them, as so many bits of information.

Einstein readied himself for John's people, for the voyage, replicating familiar environments and food: a voyaging space colony that would be a world unto itself.

Nature growing to meet its destiny.

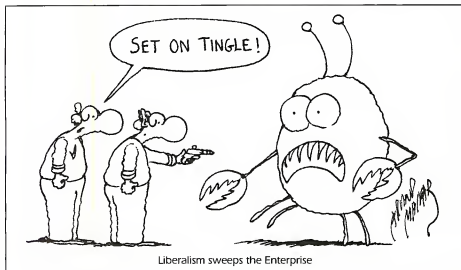
Experiencing sensation and emotion.

Einstein shaped himself, expanded, replicated, branched, each branch composed of elements measured in nanometers, each joint a sensor, building, growing, each tiny branch a reflex arc capable of controlling a microportion of nervous system, combining into larger groupings, into a mist of protean form. . . .

As John Stranger became woven into a nature as alien and evanescent as the spirits themselves. And Einstein felt the connection to the spinning earth, to the sacred land, to ghost-knit mountains and rivers of sand, to history as alive and as dead as the ghost dance . . . all to be left behind.

All to be carried forward. Now that the earth was quiet, the dream-riots over, and the dreams, the dreaming dreams of ghost-dancing spirits began.

Washtay! ♦



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If you like what you've seen in this issue of AMAZING[®] Stories, there's more where it came from. We have a small selection of back issues dating from the 1970s, plus almost every magazine from May 1990 through April 1993, available for purchase by mail order. The list on this page and the facing page mentions every magazine that's for sale, and gives a few of the stories you'll find in each one.

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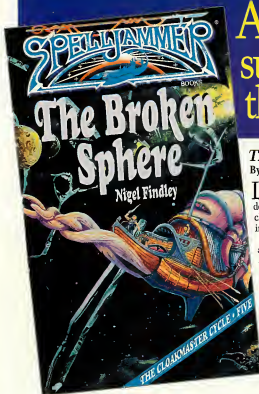
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